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bibliography: (1) Green, J. R., & Steelman, H. F.: Epileptic Seizures, Baltimore, Williams & Wilkins Company, 1956, p. 136. (2) Bray, P. F.: *Pediatrics* **23**:151, 1959. (3) Davidson, D. T., Jr., in Conn, H. F.: *Current Therapy 1959*, Philadelphia, W. B. Saunders Company, 1959, p. 512. (4) Smith, B., & Forster, F. M.: *Neurology* **4**:137, 1954. (5) Zimmerman, F. T.: *New York J. Med.* **55**:2338, 1955. (6) Lemere, F.: *Northwest Med.* **53**:482, 1954. (7) Perlstein, M. A.: *Pediat. Clin. North America*: **4**:1079 (Nov.) 1957. (8) Livingston, S., & Pauli, L.: *Pediatrics* **19**:614, 1957. (9) Carter, C. H., & Maley, M. C.: *Neurology* **7**:483, 1957. (10) Keith, H. M., & Rushton, J. G.: *Proc. Staff Meet. Mayo Clin.* **33**:105, 1958.

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VOL. 16, NO. 10 OCTOBER, 1959

Original Articles

CANCER OF THE HEAD AND NECK*

Ian Macdonald, M.D.**

THIS "WATER FRONT" sort of title was worked out between Dr. Neubauer and me as an attempt to provide a sort of running commentary, if you will, on some of the problems that arise in relation to the management of several forms of cancer of the head and neck. Like many others, I have some strong prejudices, ideas with which there may be profound disagreement by some of my colleagues.

As to *"prophylactic" neck dissection,"* I think perhaps we should first define "prophylactic." It is dissection of the neck in the absence of any clinically suspicious nodes following control, or apparent control, of the primary lesion, whether primary treatment has been by irradiation or by surgical means. In the lip, one should regard the problem as one should in any similar situation, in terms of the greatest good for the greatest number. That means asking one's self this question: Given a carcinoma of the lip which is under control, without any suspicious nodes on clinical examination, how many of those patients will subsequently exhibit metastasis to nodes? The answer is, approximately one of every 10 patients. To do prophylactic neck dissection in carcinoma of the lip is to have done at least eight or, more likely, nine useless dissections for the benefit of one patient. To me this does not make sense. For the great majority of carcinomas of the lip, after control of the primary lesion, we advise observation only. The exceptions are those lesions which arise at or near the commissure, and they are not common. A majority of lip cancers, as you know, arise in the central three-fourths of the lower lip, but with a lesion at the commissure, it may be difficult to tell whether it originated in the upper or lower lip. Unless these lesions at the commissure are small and comparatively low-grade, they represent an exception where prophylactic neck dissection is justifiable. To define it more accurately: Given a commissural lesion over one centimeter in size and Grade 2 or more histologically (because grading is of great value in lip cancer), for that patient I advise a prophylactic neck dissection, to be done six to eight weeks after the treatment of the primary lesion has been completed.

The definition of lymphnodal pathology is of some importance, as there are a not-inconsiderable number of people who have enlarged cervical nodes, up to one and even one and a half centimeters in diameter, frequently representing residual changes from prior inflammatory episodes. The presence of a single node of that size is not necessarily significant. If its consistency is firm, it may be aspirated and smears studied, but this is of value only if cancer cells are identified.

*Presented before the Sixth Annual Cancer Seminar, Tucson, Ariz., 1958. Arizona Division, American Cancer Society.

**From the Department of Surgery, School of Medicine, University of Southern California.

Example

To illustrate one of these problems, I offer the example of Mr. D.S., first seen with a primary carcinoma of the lip occupying the commissure. It was treated successfully by irradiation; it was a Grade 3 lesion, and this man had in his submandibular area one or two nodes that were less than 2 cm. in diameter, rather soft in consistency. We did a block dissection of the anterolateral triangle of the sort that I was happy to hear Dr. Brown describe. The pathological specimen showed three suprahyoid nodes that were involved by metastasis. This procedure was done in 1944, and this cantankerous old man is still alive and as mean as ever. So the commissural lesion, I believe, represents an exception to the customary treatment for carcinoma of the lip.

In the tongue, it's a much more difficult problem. I gathered from Dr. Brown's remarks that he believes in routine prophylactic neck dissections in lingual carcinoma, following control of the primary lesion. Hayes Martin, on the contrary, has flatly vetoed prophylactic neck dissection for carcinoma of the tongue. As a voter not registered to either party, I like to pursue a midzone of action, or inaction. I prefer to regard prophylactic neck dissection as a matter of individual decision in individual patients. It is not possible to cover all of the possible situations, but I'll offer two examples. Consider a man who has a low-grade, extrovertive, papillary lesion on the tip of the tongue, a centimeter or so in diameter, which has been surgically excised with good margins, and histologically is Grade 1+; I am content to watch that patient, and not do a neck dissection. The individual who has, on the other hand, a lesion of a lateral border of the tongue of any size, even a relatively small lesion, Grade 2+ and including Grade 4 lesions, after control of the primary, deserves a prophylactic neck dissection because of the tendency for such lesions to exhibit homolateral metastasis in the first two years after treatment of the primary proces. The individual who is old, or diabetic, or senile, or generally on the way down the degenerative physical hill, I would sooner not subject to a standard neck dissection. In short, I think that each patient poses a separate problem, and one cannot lay down any definite rules. During the past three years, I have been more inclined toward so-called prophylactic neck dissections for lingual cancer than in the preceding five or six years. In five or six out of each 10 surgical specimens, the products of such neck dissections, the pathologist discovers one or more nodes involved when there has been no clinical suspicion thereof.

"Commando" Operation

As to carcinoma of the lower gingiva, floor of the mouth, and of the buccal mucosa extending downward into the sulcus to become attached to the bone, these are situations where I think that a combined procedure should be done. This means standard block dissection of the neck, beginning at the clavicle and proceeding upward to remove the primary lesion in continuity. That is the so-called "commando" operation. I doubt that this combined operation is justifiable for carcinoma of the tongue unless the floor of the mouth is infiltrated by tumor, nor do I consider the so-called "pull-through" a desirable procedure. In lesions adjacent, attached to, or actually involving the mandible, whether primary in the floor of mouth or buccal mucosa, I think that the commando operation is preferable, for it does save lives and produce cures in the real sense of the word; any other approach is inadequate by comparison. Now, just for confusion, consider an example of a situation where we did not do a commando type of operation(Mr. T. W. R.). A carcinoma of the floor of the mouth or gingival mucosa, we never could tell which, had produced very extensive bone involvement, but the patient was 78 years of age when we first saw him in 1947. He was a tall, cadaverous, dolichomorphic character who had had auricular fibrillation for some years, but he was active and well compensated. We biopsied the extensive tumor in the floor of the mouth; it was an extremely low-grade squamous carcinoma. There were many areas in which differentiation was so complete that even under high power the overgrowth might pass as a typical hyperplasia rather than actual carcinoma. However, there was no doubt as to its malignant nature. There was no lymphadenopathy in his neck. We did a complete removal of the mandible, removal of the floor of the mouth, and an immediate reconstruction. A "pseudo" chin was produced by putting in a number of narrow long strips of gelfoam; with considerable fibrotic reaction ensuing, he has a feeble representation of the chin even now, 11 years later. He has reached the ripe age of 89, he still comes in to see us every six months,

is still on digitalis and still fibrillating, but has had no recurrences. This is one example of individualization in reaching decisions.

Bad Actors

On prophylactic neck dissections, I would like to reinforce what Dr. Brown said concerning lateral facial lesions of the histologic nature of squamous carcinoma. They are bad actors, particularly those that occur on the auricular and preauricular skin and in the adjacent temporal skin. They have a strong predilection to early metastasis to the cervical nodes. If the patient is reasonably young and in good condition, this is also a situation where we prefer an operation in continuity, unless the primary lesion is quite small. Some of you may question, knowing my convictions about prognosis being biologically predetermined in most types of cancer, why I am talking about "small" lesions. These are cancers in which the biology of the neoplasm is such that it does behave according to the traditional pattern, implying the importance of diagnosis and treatment at a time when the primary lesion is still limited. There are exceptions, of course, but in general, oral cancers behave in a fashion indicating that time and degree of space occupation (or size) is of determinative importance in prognosis. (This does not apply to primary sites posterior to the circumvallate papillae, i.e., base of tongue, tonsil, pharynx.)

The next phase of this water-front coverage is the question of "prophylactic" irradiation, and I will dispose of that, if you please, by stating flatly that there is no such thing as "prophylactic" irradiation of the neck. Given a patient in whom there is no clinical suspicion of nodes, much less anything proved, to irradiate the entire side of the neck from mastoid to clavicle and deliver a canceridal "prophylactic" dose would produce sequelae of major and possibly disastrous importance to the patient. I assure you that it is intellectual titillation to think that it is practicable — even with cobalt barbecues!

Next is the choice between operative treatment and irradiation. In cancer of the lip, my own preference and practice is simply stated: The small tumors of the lip are ideal for treatment by X-ray therapy; the large lesions require surgical treatment. This means that those that are attractive for the surgeon are ideal for irradiation. From the patient's standpoint, radiotherapy produces ideal cosmetic results. If one observes the necessary rules of adequate dosage, with the proper quality of irradiation, suitably one can achieve in cancer of the lip, in our experience, over 90 per cent five-year controls. This cure rate is confined to lesions less than 2 or 2.5 cm. in diameter, which have not extended more than halfway to the gingival-buccal sulcus, and are without clincial evidence of nodal metastasis. I am not concerned with the grade of the lesion histologically, whether it's reported 1 or 4; these small and favorable lesions are ideal for irradiation.

Irradiation vs. Surgery

When carcinoma of the lip exceeds the criteria of anatomical extent just described, irradiation becomes a more formidable affair for various reasons, and surgical resection with immediate reconstruction is preferred for these larger tumors if there are no medical contraindications. If the lesion is attached to periosteum, or even adjacent to bone, segmental resection of the mandible (or maxilla) is necessary to obtain an adequate margin. If there is no significant lymphadenopathy, no neck dissection is done, although it may be necessary to remove one or more enlarged nodes to differentiate microscopically between inflammatory reaction and metastasis. Should lymphnodal metastasis become apparent later, a majority of such patients achieve permanent control of their disease with a delayed neck dissection — unlike the same situation in lingual carcinoma.

Many carcinomas of the upper lip are actually of cutaneous origin near the vermillion border, with early mucosal involvement. This provides an excuse for expressing my preference for irradiation for almost all basal and squamous carcinomas of the skin. As in the smaller lesions of the lip, surgical removal is equally effective, and I have no possible argument with those who employ regularly *adequate* excisional procedures. I just happen to be a surgeon gone wrong, who also does radiation therapy. We treat skin cancer with 3,000 roentgens (in air), half-value layer of 0.8 mm. of copper, and fractionate that dose into six equal treatments over a period of three weeks. In basal and squamous cell lesions of the eyelids, for example, in almost 200 patients, our 5-year rate of control without recurrence is 96.5 per cent. Such treatment is followed by slight atrophy of the skin, and usually a transient decoloration, and rarely any more notable changes.

Unfortunately, the plastic surgeons have an unhappy experience in that their main exposure to end results of radiotherapy is in patients who have "gone wrong"; they usually have gone wrong because they had such poor treatment in the first place. I am happy to notice that Dr. Brown is without the anti-irradiation prejudice exhibited by many plastic surgeons, although I can't blame them for such bias.

Role For Irradiation

I would not want you to think, returning now to the lip, that the "giant economy" size carcinoma cannot be treated by irradiation. Mr. P.R., for illustration, had involvement of three-fourths of his lower lip. Ordinarily, he would have had a resection of practically the entire lower lip, with an immediate closure by sliding cheek flaps. This patient, however, had complications – not only diabetes, which would not have been any contraindication, but also of rather severe myocardial damage. We were obliged to treat him with radiation therapy, and the result was fairly satisfactory, although with a little more deformity than the average operation produces. He has obvious atrophy of the skin, a little erythema developing in areas, but he is still well some six years after treatment. At least this indicates that, even in the larger lesions which we prefer to treat surgically, one can still control permanently cancer of the lip in many patients with properly given irradiation. Because of the size of the lesion, this man had a different technic of treatment, with x-radiation of half-value layer of 1.6 mm. of copper, or a more penetrating and harder beam of irradiation, and with greater fractionation. Of course, the underlying teeth and bone are always protected by lead, which is inserted under the lip, and very accurate delimitation of the portal of irradiation is assured.

Irradiation does have to go well wide of the apparent border of a primary lesion; just as one aims at a wide removal by surgical excisions, irradiation has to be wide, or at least one centimeter of margin in every direction. This is another way of saying that successful radiation therapy requires the same kind of thinking that a surgeon should use when he essays to do extirpative treatment of a malignant neoplasm.

Consider now Mr. E.R., a client of the Los Angeles County Hospital, who had a long-neglected lesion primary in the lower lip, too extensive to permit primary repair of any sort. After consultation with the plastic surgery service, we elected to do a primary excision, allow it to heal, and then let the plastic surgeons have him later. This brings up a fundamental consideration of mine: Unless one has the privilege of working with a plastic surgeon who has the "Barrett Brown philosophy," I would suggest that the best place for him to be during the extirpation of the lesion is outside the operating room. Don't let him assist you in doing the excisional procedure if he has the conservative attitude and a worrisome obsession over cosmetic niceties in such a problem as this. He would soon be arguing with you – to leave him that little centimeter here or there. Let the man who is intent upon a curative result do the excisional procedure and, even if there is to be an immediate repair, let the conservative plastic surgeon take over after the resection is complete. I regret the expression of such a critical attitude, but it is the product of experience.

All Rules Have Exceptions

An old man (T.K.) had a primary carcinoma of the lip of moderate size treated by surgical removal, and he developed, when he was in his late 70s, a submental metastasis proved by needle biopsy. This was some eight or nine years after the resection of the lower lip and, again, because of his general physical condition, instead of treating him surgically it seemed obvious that there should be a trial with irradiation, especially as there was no other cervical lymphadenopathy discoverable. He had external irradiation through two portals, cross firing the lesion. This was followed by interstitial radium in the form of weak radium needles, by the technique of Martin (of Dallas). A year or more afterward, his node was completely regressed, and his facial hirsutism so disturbed by the radiation that he got rid of his royal beaver with notable improvement in his appearance. This, of course, simply demonstrates that to every rule there have to be exceptions, even to reversing our field with surgical treatment of the primary, smallish lesion and irradiation of cervical nodal metastasis.

To indicate the place of irradiation in carcinoma of the larynx, consider a schematic representation of a lesion suitable for laryngeal fissure, to indicate that this is also the kind of involvement that deserves a trial of irradiation. By

the acid criterion, if I had in my own larynx a lesion which was either carcinoma in situ on biopsy, or of that early group which involves one cord only, even if there is some involvement of the anterior commissure, I would demand a trial of x-ray therapy. Involvement of the posterior commissure is more ominous, and is an indication for laryngectomy. By a trial I do not imply treatment in a delicate fashion. Radiation therapy is given through opposing portals as small as are adequate, accurately set up under fluoroscopy at the time of the first treatment, and accurate marking of the portal on the skin. Dosage is not in terms of a particular number of tumor roentgens, but by the old-fashioned criterion of the biological reaction described by Coutard years ago; the appearance of a membrane, or *epithelite*, in the larynx. During the latter half of treatment, daily indirect laryngoscopy is an essential requisite of this treatment, and when a membrane has developed, treatment is complete. This may occur with a so-called tumor dose of 3,000 to 3,500 roentgens in one person, or 5,000 or more in most individuals. Having given that amount of irradiation, if there is complete regression of the lesion, careful observation is essential. Our experience in the last 19 years has been limited to some 40-odd carcinomas of the larynx; we don't see many, as the otolaryngologists are (properly) in control, and prefer surgical treatment. We have a 65 per cent five-year control rate of these faw carcinomas by irradiation. This is not as good a score as with laryngectomy, but each of that 65 per cent still has a natural voice. Also, this group includes a few patients with more than the early involvement described above; when five-year results are calculated for cases with involvement of only one cord, the five-year rate is over 80 per cent. That is why, personally, I would prefer radiation therapy for an early lesion, to be followed by laryngectomy if recurrence appeared. For the more advanced lesions, as I have implied, surgical treatment is the treatment of choice, with neck dissection when indicated.

These random observations on a variety of problems in "head and neck" cancer, as illustrated by clinical anecdotes, are meant to reaffirm one consideration cardinal in all cancer therapy: The prime necessity for effective treatment is individualization.

THE POSITION OF INSURANCE IN THE DOCTOR-PATIENT RELATIONSHIP*

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and
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YOUR secretary-treasurer, in his letter confirming your gracious invitation to appear before you this morning, said "We would like to hear from you constructive criticism of the internist and would like to know your opinion of what the public and the insurance companies expect of us." This is an inspiring challenge, for it recognizes that in the framework of our voluntary system of private enterprise, private medicine and private insurance must work together in public service. We must work together with good, mutual understanding. We must remember that the public is our judge.

Through the Health Insurance Council, the insurance business reaches out to its partners in public service, the providers of health care, in the search for a better understanding of our respective roles and relationships. My observations here are a part of that search. I hope you will find that I have addressed myself to some of your specific problems, although I have chosen to express myself rather generally.

The practice of medicine, as we see it in America today, is characterized by two articles of faith:

1. Freedom of choice of doctor and hospital.
2. The doctor-patient relationship that we believe to be essential to good medical care.

Freedom of choice, of course, is at the very heart of our competitive system of private enterprise. We know that a monopoly, in any field, becomes dictatorial, vulnerable to political pressures, and unresponsive to the needs of individuals. A long time ago, an old lawyer told me: "You don't bargain with monopoly; you take what you get."

Competition, on the other hand, means that you do have a choice. Competitors struggle for public favor by offering the public something better. Your product, or your service, may be the best today, but if tomorrow your competitor turns up something better, your customers or your patients have the privilege of choosing that. That keeps business on its toes; that's how we make progress in this country. The public is the beneficiary of competition. Clean, vigorous competition is one of our most effective incentives to quality and continued improvement in our services.

It's interesting to note here that freedom of choice is probably more significant in the second choice than the first. The presence of a competitor — the privilege of changing our choice at any time — is a precious freedom that we'd lose under a government system. It is a better incentive to quality than most regulation.

It seems to me that the emphasis we place on the doctor-patient relationship is a natural result of freedom of choice. I asked my wife, when I wrote this, what she thought the "doctor-patient relationship" means. "Well," she said, "you must have confidence in your doctor; if you don't, you'd better get another doctor."

I know a woman, a soldier's wife, who had three children born in military hospitals. She had pre-natal care in every instance, but she never saw the doctors who delivered her babies until the day of their birth. Her opinion of military medicine is very poor. That personal confidence, the doctor-patient relationship, is very hard to establish when the patient has no choice.

Three Areas

We know that the mental attitude of a patient is often an important factor in physical recovery. The successful doctor knows that the mental attitude of the patient is very important to his own success. The doctor's reputation, and prestige, indeed, his economic survival depend upon the confidence his patients have in him.

So the doctor takes special care to assure the confidence of the patient. Some of this, of course, is just ego-building — assuring the patient of his own personal importance as an encouragement to recovery. Much of it is precautionary — to avoid the patient exercising his sacred right of free choice — in the direction of another doctor! All of it adds up to the doctor-patient relationship — *"the feeling I have when I'm glad to place myself in good hands."*

It seems to me that the doctor's effort to

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establish and strengthen the doctor-patient relationship's confidence — may be in three areas:

First, he learns all he can about the patient's needs and problems. Second, he carefully explains the care he provides. The doctor sells the idea of good care and enlists the co-operation of the patient in his own care and recovery. Third, he carefully explains the cost. The doctor who says to me, "Don't worry now, I'll tell you later," doesn't ease my mind at all. I want to know now and be sure where I stand. Worry is closely related to uncertainty.

Now — in giving a layman's viewpoint of the doctor-patient relationship, I have led up to my first major point:

The relationship of the individual doctor and patient has a parallel at the collective level: the relationship of the medical profession to the public as a whole. Indeed, it is not unfair to say that the future of medical practice in this country depends upon what American medicine does to maintain public confidence.

You see, you in your practice, never take the attitude of your patient for granted. Your patients are always judging you. The public is judging the medical profession, too — always. Today is not more critical than yesterday. Our voluntary system puts pressure upon us all to do our best and to demonstrate that we are doing a good job.

How does the medical profession maintain and strengthen the doctor-patient relationship at the collective level? Very much as the individual doctor does:

First, medicine must learn all it can about the public's needs and desires and attitudes. You can't ignore public opinion. Second, medicine must explain the care it gives. Our magazines are telling medicine's story to a wise and keenly interested audience. The marvels of today's medical care are pretty well accepted by the public. Third, medicine must explain its costs. The medical profession must take the public into its confidence if it wishes to continue to enjoy public confidence. The mystery has gone from the therapeutic side of medical care, and public confidence is strong on that point. But the mystery remains on medical costs and most of the criticism we hear of medicine today is on the economic side.

So this is my second main point: *The doctor-patient relationship at the collective level, between the medical profession and the public as a whole can be strengthened by a better public understanding of medical costs and standards of charging.*

And, now I can get to the title of this talk — the position of insurance in the doctor-patient relationship. I will state it this way as my third major point:

Payment of the doctor for his services is an essential part of the doctor-patient relationship. The medical profession must make its contract directly with the public; it should not try to bargain with insurance on fee levels.

I have observed that some specialty groups such as your own, have sought to have insurance companies change their policies so as to give that specialty its deserved recognition. There is a feeling, partially true, that you could make a contract with us that would be influential, at least with the patient. There are reasons why you should not do this, and why we cannot bargain with you.

Third Party

In any contract between medicine and insurance, medicine would place itself, to that degree, under control of a third party. Do you really want this? Aren't you better off to take the longer range, though more difficult approach of selling your cause to the public? I assure you, the insurance business is keenly sensitive to consumer demand. We have many varieties of coverages and our agents are eager to sell every bit of protection your patients will buy. You tell them what to expect in the way of professional fee levels and insurance can tailor its contracts to the joint needs of doctor and patient.

Admittedly, patients and doctors sometimes look to the insurance fee schedule as a guide to a proper professional fee should be. The insurance business deplores this. Not all insurance schedules are intended to be adequate; we do not presume to set your fees. This is your prerogative. But, you must exercise it in such a way that the public clearly understands you and gains confidence in you.

Even if it were to medicine's advantage to bargain its fee levels with insurance — and I have just said it is not — there are reasons why insurance cannot bargain on this point.

You see, in the first place, the insurance business is simply the custodian of the public's money. We have no right to give it away or even to bargain it away. We are not a part of

your bargain with the public. It is our function to underwrite that bargain and to make it possible. The money we pay in health insurance benefits is that of our policy-holders, entrusted to us for certain, definite, and limited purposes.

A second factor is that it should not be the function of the insurance mechanism to control the economies of medicine. But we point out to you that the public will not permit costs to be uncontrolled. It is part of medicine's bargain with the public that it exercises a prudent control over costs; and it is essential to the maintenance of public confidence that such control be demonstrated in a satisfactory manner.

It is probable that insurance has intensified this problem of self-control. Insurance helps the patient pay his doctor bill. This has meant fewer bad debts for doctors, fewer charity cases. But this fine state of affairs can also be a trap. For the patient who would have resisted paying your fee from his own pocket is now eager to see your bill paid – by his insurance. Individually, the patient will seek to induce you, perhaps unconsciously, to do things that will increase the cost of medical or hospital care. Collectively, these are the same citizens who will turn upon you, and scream that all doctors are opportunistic, undisciplined and greedy – and that they have a case to prove it!

The fact is that doctors have done much more about controlling the economics of health care than the public realizes, and more than even doctors sometimes realize. The insurance business believes that the control of medical costs must be undertaken by the medical profession itself, and explained to the public as part of the collective doctor-patient relationship I have referred to. We all agree that self-control is the best control.

I must make it clear that I am not referring to controls through grievance committees. A grievance committee can only reach the infrequent gross overcharges, and although one flagrant case can multiply a thousand times in the gossip that goes around, these are not the real causes of inflation in medical costs.

For Effective Control

The really effective control that I have been thinking of here is for the medical profession to take the public into its confidence in establishing fairly exact standards of professional charges and fees. I submit to you that this is also one of the most effective measures for maintaining and strengthening public confidence in the medical profession. And I repeat – doctors must not look to the insurance business to establish those standards; this is the doctor's job and a part of the collective doctor-patient relationship. Insurance should not come between the profession and the public.

As a matter of fact, the insurance business is somewhat nervous over even discussing the idea that doctors should permit their standards of charging to be a matter of public knowledge. We're afraid you doctors will think the insurance companies are trying to force the profession into a rigid pattern for our own selfish interests. We do have this selfish interest; if you doctors lose your freedom, we lose our accident and health business; and the public loses a system that has the most effective incentives to quality and good service.

The idea of permitting the public to know how professional fees are determined is not as strange to doctors as it is to insurance companies.

Five years ago, the medical society in San Joaquin County, California, adopted the idea of a fee schedule based on the average income of the community rather than the income of each patient. The doctors there are so pleased that this year several other counties have set up similar foundations in which the community-wide fee level is one of the basic concepts.

Even in the Bronx, in New York City, Medical Economics reports, doctors have found it desirable to hang a plaque in their waiting rooms announcing the price of office visits and home calls.

I'm sure you can think of many other instances where doctors have avoided the public uncertainty over fees by a frank disclosure. This is not a new concept; although there are differences of opinion as to its desirability.

Is the idea of an orderly approach to professional fees such a shocking idea? Not to the courts of law, where the concept of a "reasonable and customary fee" is often used. Not to the California Medical Association which pioneered, several years ago in a scientific study of the relative values of the more common procedures. Nor to the American Medical Association, whose house of delegates, last December, recommended that state medical associations conduct similar studies in their own areas, using the California format for uniformity.

Most doctors, I am certain, try to have their

charges bear a reasonable relationship to the accepted standards of the community. I saw this demonstrated in a county medical society meeting in a semi-rural community. A local employer had just bought a major medical expense insurance program for his employes. He pleaded with the doctors not to increase their fees simply because of the existence of insurance and the absence of a fee schedule. One old doctor burst forth: "We all know what the going rates are in this area. What's all the shooting about?"

Mixed Blessing

This illustrates my fourth and final major point, I think. The fact is that while the doctors all knew the going rates in the community, the public didn't. And so — quite naturally — the public was suspicious. It is my opinion that until doctors establish reasonably clear levels of charges so that the public may understand, every doctor and every fee will be subject to the suspicion that inevitably accompanies uncertainty.

So my fourth and final point is that health insurance, like most good things, is a mixed blessing. It has lowered the financial barrier between doctor and patient, and thus brought more doctors and more patients together. *But there is grave danger that an over-dependence upon health insurance may squeeze out an essential element of the doctor-patient relationship: the awareness that, even with health insurance, it is the patient who pays the doctor.*

If the patient or the doctor, or both of them, forget this fact, then insurance has interfered seriously with one of the most important elements of our voluntary system and one of the strongest incentives to quality. You — the doctor — must not let that happen. The satisfactory doctor-patient relationship is your best guarantee of continued freedom from external regulations and restrictive controls. You must take affirmative steps to be sure that the patient deals with you and that you do not let his insurance come between you. Insurance stands behind you both in the transaction — not between you. And the medical profession must maintain public confidence by making its deal with the public.

In summary, then, here are the points I have suggested for your consideration:

First, the relationship of the individual doctor and patient has a parallel at the collective level: The relationship of the medical profession to the public as a whole.

Second, the doctor-patient relationship at the collective level, between the medical profession and the public as a whole can be strengthened by a better public understanding of medical costs and standards of charging.

Third, payment of the doctor for his services is an essential part of the doctor-patient relationship. The medical profession must make its contract directly with the public; it should not try to bargain with insurance on fee levels.

Fourth, there is a grave danger that an over-dependence upon health insurance may squeeze out an essential element of the doctor-patient relationship; the awareness that even with health insurance, it is the patient who pays the doctor.

My plea is that, for the preservation of our voluntary system, American medicine give primary attention to strengthening public confidence in medical costs and standards of charging through more adequate public information. The public today has great confidence in the quality of medical care. There is equal faith in the ability of voluntary health insurance to finance it. But it would be a serious mistake to take these for granted.

Voluntary health insurance has been the principal bulwark of American medicine against the encroachment of government and monopolistic regulation. We are proud to be your allies in preserving the voluntary system of private enterprise, because we believe our way of life produces pressures upon all of us to perform more efficiently in our service to the public.

But health insurance is simply a useful tool. Like any complex instrument, it must be understood, and it must be used properly. I hope I have demonstrated to you that the proper place of health insurance is *beside* you and your patient, *beside* you and your public, and *not between* you.

MEDICINE AS A SOCIAL SCIENCE*

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IN A letter to the chemist Joseph Priestley, Benjamin Franklin once expressed the belief that a time would come when "all diseases may by sure means be prevented or cured, not excepting that of old age, and our lives lengthened at pleasure even beyond the antediluvian standard." At first sight, we appear today close to the fulfillment of Franklin's optimistic prophecy. Not so long ago, most children died during infancy or in their teens; only a small percentage survived into adulthood. For example (according to Hugh Smith in *The Family Physician)* approximately two-thirds of London's children born between 1762 and 1771 died before the age of five, fully three-quarters of them never reached the age of two. This state of affairs prevailed not only among poor people, but also among the socially fortunate as illustrated by the case of Queen Anne, with 17 pregnancies and not a single surviving child.

The situation is very different today in the Western world. Largely thorugh the control of microbial diseases and the improvements in general nutrition, the immense majority of children survive. Moreover, even those suffering from diabetes, congenital heart abnormalities, and many other formerly fatal diseases, can now have an almost normal span of life. Progress has been much less dramatic with regard to the diseases which affect adulthood. Yet it is obvious that several types of ailments and accidents which once were uniformly fatal in this age group can now be treated so effectively that they have been all but eliminated as important causes of death. As a result, more and more persons in our communities exceed the life span of three score and 10 to which so few could aspire in the past.

While the countries of Western civilization have, of course, been the chief beneficiaries of the modern advances in human health, some of the less privileged parts of the world have also shared in the fruits of medical science. Indeed the 10th anniversary of the World Health Organization was celebrated last year by many speeches affirming that the world is approaching medical Utopia. In the words of Dr. M. G. Candau, director general of WHO, "If the great advances gained in science and technology are put at the service of all people of the world, our children and their children will live in an age from which most of the diseases our grandparents and parents took for granted will be banished . . . It may no longer be Utopian to envisage a new chapter in the history of medicine."

No one can take exception to these words, but their implications are far more complex and less cheerful than appears at first sight. Within limits it is true that we can control many of the diseases that "our parents and grandparents took for granted." But this does not prove that we know how to control the disease problems that will be encountered in the future, nor even, for that matter, those of the present. It is seldom recognized that each type of society has diseases peculiar to itself, indeed that each civilization creates its own diseases. Furthermore, there is no evidence that the techniques developed for dealing with the disease problems of one generation can cope with the problems of another. The word "Utopia" is here the telltale. Whether they be medical or political, Utopias imply a static view of the world. In reality, however, societies are never static; men also change, and so do all their problems. True enough, we can expect a "new chapter in the history of medicine," but the chapter is likely to be as full of diseases as its predecessors; the diseases will only be different from those of the past.

There is no doubt, of course, that scientific medicine is now essential to our social existence, and contributes much to the success of modern societies. The paradox is that, despite the spectacular advances made in the knowledge and treatment of disease, the need for hospital facilities and the cost of medical care continue to increase. This results in part from the fact that criteria of health have become much more exacting in modern societies, but other reasons are also apparent. While a few of the old disease problems are being solved, new ones which are constantly cropping up make modern man increasingly dependent on medicine for his very

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survival. The situation is not unlike that faced by the farmers and gardeners in their attempts to protect crops against weeds and pests. The task is never finished because as one problem is solved, another soon appears which requires attention. Nature always strikes back. As discovered by the Red Queen, it takes all the running we can do to remain at the same place.

The Good and Bad

It would be presumptuous to try to predict the disease patterns of the future. Suffice it to contrast here, for the sake of illustration, some of the problems which dominated medicine a century ago with those likely to become of increasing importance in the near future.

Whereas water pollution used to be responsible for much serious and even fatal disease among our ancestors, air pollution is today taking its place. Chemical fumes from factories and exhausts from motor cars are causing a variety of pathological disorders that bid fair to increase in frequency and gravity as time goes by, and that will handicap even more the lives of our children. There is reason to believe that various types of radiations will soon add their long range effects to this pathology of the future.

During recent decades, we have gone far toward controlling microbial spoilage of food, but we are beginning to recognize that the new synthetic products which have become part and parcel of modern life can elicit an endless variety of toxic and allergic effects.

The vitamin and other nutritional deficiencies that used to be the cause of much disease have now become rare; in their place, other forms of malnutrition are arising from the fact that the nutritional regimens formulated for physically active human beings are no longer suited to the automobile-borne and air-conditioned life in the 20th century.

In the past, the labor classes suffered from physical exhaustion; now labor saving devices and automation are beginning to generate a type of psychiatric disturbance that will greatly complicate the medicine of tomorrow; boredom is replacing fatigue.

Even more striking, perhaps, is the fact that medicine is creating new disease problems by reason of its very successes. This other side of the picture came out in the course of a debate held in London on Nov. 17, 1952, when the Hunterian Society voted 59 to 47 "that the continued advance in medicine will produce more problems than it solves." Facetious as it is, the resolution clearly reflects the awareness that all is not as well as advertised in the world of medicine.

Among the new problems arising from the partial control of man's ancient plagues, some have an economic basis and today are apparent chiefly among the underprivileged peoples of the world. In the past, microbial diseases acted as one of the checks in population size by killing large numbers of children and keeping down the number of persons who reached old age. To put it rudely, nature balanced the books for us. Today, public health measures, supplemented by the use of insecticides and anti-microbial drugs, greatly reduce the number of early deaths. As the birth rates show as yet no sign of decreasing, the world population is growing in an unprecedented manner. In Ceylon, for example, the partial control of malaria resulting from the use of DDT has resulted in a sudden increase of the population during the past years. Unfortunately, malaria control in the tropics is not an unmixed blessing because national economies are rarely capable of making orderly adjustments to the new state of affairs. It is of particular importance in this regard that food production and especially the supply of well balanced proteins cannot keep pace with the increase in world population. Advances in agricultural and industrial technology will of course improve food supplies, but not fast enough for the needs. While the world population increased by 8 per cent during the past 10 years, the food production increased by only 5 per cent, and in consequence more people go hungry today than did a decade ago. There is no doubt that food deficiencies will, in the long run, cause more physiological misery and suffering than has been prevented by the partial control of infection.

Other Consequences

Less apparent as yet, but also a threat for the future, are the economic and biological consequences of the survival of persons suffering from various types of physical and mental deficiencies. Increasing numbers of these persons cannot pull their full weight in society and require constant medical supervision and economic assistance. They constitute a social burden which is likely to grow heavier with time precisely as a result of medical advances. Even more important than these economic considera-

tions, however, is the fact that many of those who are saved from death do transfer to their progeny the genetic basis of their deficiencies. As stated by the English geneticist, Darlington, "Those who were saved as children return to the same hospital with their children to be saved." In other words, we can anticipate the accumulation in society of individuals who will be able to function, survive and reproduce only by virtue of drugs or surgery. They will be constantly dependent on medical supervision for their welfare.

During recent decades, students of human genetics have repeatedly expressed their concern regarding the biological consequences of this situation. In a gloomy mood, Prof. H. J. Muller spoke of the time when people would have "to live carefully, to spare and to prop up their own feeblenesses, to soothe their inner disharmonies and, in general, to doctor themselves as effectively as possible. For everyone would be an invalid, with his own special familial twists." Let us hasten to say that not all geneticists take such a dark view of our biological future in the Western world. But even the most optimistic probably recognize that there is much truth in a quatrain published shortly after World War I in the London Spectator:

Science finds out ingenious ways to kill
Strong men, and keep alive the weak and ill—
That these a sickly progeny may breed,
Too poor to tax, too numerous to feed.

While these problems are becoming more apparent in modern societies, they are not entirely new. In ancient civilizations and among primitive peoples, one commonly finds social customs and taboos which represent efforts to deal with the difficulties created by the existence of individuals who are economically or biologically deficient. Among Eskimos and certain Indian tribes, aged people were expected to abandon the camp and die once they had become too much of a burden for the group. For different but related reasons, unwanted children were left to die from exposure in Sparta. In fact, similar practices which seem cruel to us have been defended by some of the most idealistic social philosophers in the past. Suicide of the sick was encouraged by the Stoics and other sects, even by Plato. At Marsielles in Roman times, poison was kept in the city for those who could present to the council a reason for wishing to rid themselves of life. More surprisingly, a similar attitude was taken in the 17th century by Thomas More (who nevertheless has been recognized as a saint by the Catholic church, and endorsed by Communist Russia). In More's Utopia, those who were incurably ill and in continual pain were urged by the priests and magistrates to kill themselves. "Yf the dysease be not onelye vncurable, but also full of contynuall payne and anguyshe, then the priestes and the magistrates exhort the man, seynge he ys not able to doo annye dwtye of lyffe, and by ouerlyuing hys owne deaths is noysome and yrkesome to other, and greuous to hymself; that he wyll determyne with hymselfe no longer to cheryshe that pestilent and peynefull dysease: and, seynge hys lyfe ys to hym but a routmente, that he wyll nott be vnwyllynge too dye."

In this respect at least, the ethics of the modern world have grown loftier since Plato and More. All decent men now regard human life as sacred, worth preserving whatever the cost to the individual or to society. Moreover, experience has taught us that some of the greatest achievements of the human race have come from individuals suffering from handicaps that rendered their physical life miserable and that would have prevented their survival in an unsheltered environment. Thus, selfish motives agree with modern ethics and religious ideals in making the preservation and prolongation of human life the ultimate goal of medicine. There is, furthermore, biological justification for this attitude. While it is certain that the physically handicapped could not long survive under "natural" conditions in the wild, it is also true that medical and other social skills make it possible for men to live long and function effectively in the modern world even though they be tuberculous, diabetic, blind, crippled, or psychopathic. The reason of course is that fitness is not an absolute characteristic, but rather must be defined in terms of the total environment in which the individual has to spend his life.

Implications Overlooked

On the other hand, it must be realized that fitness achieved through constant medical care has grave social and economic implications which are commonly overlooked. On the one hand, we can expect that the cost of medical care will continue to soar because each new discovery calls into use more specialized skills and expensive items. As of today, medical care

represents some 10 per cent of the national income in the United States. There is certainly a limit to the percentage of its resources that society can devote to the maintenance of its medical establishments, and a time may come when medical ethics and policies will have to be reconsidered in the harsh light of economics. Furthermore, it must not be taken for granted that the power of science is limitless. Only during the past few decades and only in a few situations has medical treatment permitted the victims of genetic disabilities to survive and to reproduce on such a large scale. Should the trend continue, therapy may not be able to keep pace with the problems that will continue to increase in number and in variety. Yet, failure to meet them might eventually lead to biological extinction. The problem before us, therefore, is to reformulate medical policies compatible with our system of ethics, but within the limitations imposed by economic and biological consequences.

Ever since Malthus, many students of human ecology have pointed to the dangers inherent in the continuous growth of the human population, and they have emphasized the urgency of taking measures for limiting its size in the world at large. While it is obvious that medicine cannot ignore this issue, it is also essential to emphasize that the population problem should not be considered only from the point of view of numbers. The maximum desirable size of the human population will be determined by technological developments as well as by ecological factors and values which have not yet been adequately explored and which cannot be discussed here. But whatever the quantitative limits put on the maximum desirable population in the world or in any country, the qualitative characteristics of the people are at least as significant as their numbers, indeed probably more crucial for the future of the human race. It will serve no useful purpose in the long run to limit the size of the human population if adequate steps are not taken to maintain its quality – the biological, intellectual and moral stamina of its fiber. Because of the nature of my assignment I shall limit my discussion to the medical aspects of this problem, although the other aspects are at least as important.

First, it is necessary to emphasize the obvious but often forgotten truth that to prevent disease is more important than to cure disease. In certain scientific circles, as well as in the lay mind, there is a tendency to believe that the "conquest" of disease depends primarily on the development of therapeutic procedures and particularly of drugs. In reality, however, treatment of established disease is equivalent to bringing the fire company a bit too late. The blaze may be put out, but there is often a good deal of damage. Moreover, putting out the fire rarely corrects the conditions which originally caused it to occur. Needless to say, modern medicine has contributed enormously to the development of techniques for the prevention of disease and indeed some of its greatest practical successes have been in this area. But much remains to be done in the field of prevention. It must be emphasized over and over again that the ultimate control of the great plagues of our times – among others the vascular diseases, cancers, or mental disorders which are so much talked about at present – will depend more on prevention based on knowledge of their genesis than on methods for the treatment of sick people. The lay public and the organizations concerned with the distribution of research funds must become sophisticated enough to recognize the necessity of dealing with the social factors which contribute to the increased prevalence of certain disease problems in our type of society.

Role of Environment and Behavior

There is no doubt that much prevention of crippling disease can be achieved through certain types of reforms in our way of life. One needs only mention the fact that the cleaning up of our cities and the general improvement of living conditions at the end of the 19th century were the most important factors in changing the monster of infection into but a shadow of its terrifying past. Likewise, it is not unlikely that effective control of air pollution – and this goes beyond abatement of smoke and removal of soot – will contribute far more to the control of pulmonary diseases than would the discovery of any drug for the treatment of lung cancer or chronic bronchitis. Many other examples could be cited to illustrate the crying need for studies on the role played by the environment and by behavior in the causation of disease. It is rather surprising – and shocking – to see this type of research so grossly neglected in a society which has derived some of its most startling successes from the control of the environment.

Worth considering also is a re-orientation of research in the field of individual resistance to disease The most spectacular achievements of modern medicine have been in the development of procedures for the relief of symptoms, and also of techniques for dealing with specific pathological processes — for example, vaccines or antibacterial drugs for certain types of infection, hormones for endocrine disorders. In contrast, the factors which affect the general ability of the body and of the mind to meet the stresses and strains of life have been very little studied and as a result only the vaguest knowledge is available concerning this aspect of medicine. Yet, it cannot be doubted that human beings possess a wide range of adaptive power and that their potentialities in this respect can reach their full manifestation only under the proper kind of physiological training. This fact points to the need for more intensive studies of the mechanisms through which man achieves adaptive fitness to the various forces of his total environment.

From the social and religious points of view, the most difficult of the problems arising from the increasing power of medicine to affect human destiny will be the formulation of techniques to prevent the accumulation of unwanted hereditary characters in the population. At the outset it must be acknowledged that the science of human genetics is in such a primitive state that it cannot yet constitute an effective guide for action. Furthermore, even when adequate scientific knowledge in this field has become available, emotional factors will long interfere with its application to problems of human medicine. In general, as noted by G. K. Chesterton, "Men do not marry in order to have children, they marry because they are in love," but unfortunately, the fact that they are in love does not guarantee the biological quality of the children they beget. It will be long before genetic considerations have much influence on family planning. Yet, even in this most delicate area of human feelings, it is not unlikely that education, based on knowledge, can progressively and usefully modify social mores. In fact, history provides many precedents for the social acceptance of limitations in the freedom to select a mate. For example, primitive people had long ago evolved taboos against marriage between kin, and restrictive regulations to this effect exist in all societies. It can hardly be doubted that these restrictions originated from the subconscious awareness that consanguinity often has unfortunate biological consequences. During recent decades, many countries have introduced premarital tests for veneral diseases; it is probable, therefore, that tests aimed at the prevention of hereditary diseases will also find acceptance once their practical usefulness has been established and the public convinced of their value. Mankind has displayed in the past and can certainly display in the future great ability in adjusting its ethical and religious beliefs to the practical requirements of life in complex societies.

The considerations which have been presented in the preceding pages cannot yet influence the behavior of the practicing physician during the performance of his daily task in the treatment of disease. The moral responsibility of the physician in our society is to use all available resources for the succor of the sick and for the preservation of life, whatever the cost and the consequences. But the duty of the practicing physician toward his individual patient is only one aspect of medicine. Another aspect is made up of the knowledge, practices, and points of view which bear on the welfare of the community as a whole, and on the future of mankind. And this has a large bearing — even though ill-defined because never discussed — on the formulation of a social philosophy of medicine.

Dangerous Illusion

In my opinion, it is meaningless and dangerous to encourage the illusion that health is a birthright of man, and that freedom from disease can be achieved passively through the use of drugs and by other medical procedures. Like political freedom, freedom from disease should not be regarded as a commodity to be distributed by science or government, or to be obtained passively from a physician or at the corner drug store. Goethe's words apply here: "What you have inherited from your father, you must earn again, or it will not be yours." Likewise, health can be earned only by a disciplined way of life.

It must be realized also that health and disease are concepts too complex and too subtle to be defined merely in gross physical terms. The meaning of these concepts is conditioned by the demands of the social environment and even more by the goals that the individual form-

ulates for himself. Optimum performance imposes different health requirements on the plowman, the jet pilot, and the philosopher. Thanks to medical science, we are in the fortunate situation of having today more than ever before the means and the knowledge to achieve the kind of health that we want, but this does not relieve us of responsibility. The truth is that the power at our disposal will be to no avail unless we work for the kind of health that we want, and this demands that we define our individual and social goals and that we have the courage to make choices.

It must be realized, furthermore, that the attitude of the physicians who are practicing the medicine of today, and the efforts of the scientists who are creating the medicine of tomorrow, are influenced – and to a large extent directed – by the beliefs and wishes of the culture to which they belong. If the social atmosphere puts a great premium on techniques and products designed to minimize effort, to relieve pain, and to increase the selfish enjoyment of today, these goals will be given priority by medical practitioners and research scientists. To a very large extent, this is what is happening today, in my opinion at the sacrifice of higher values. I believe that in medicine as in other social pursuits, the long range welfare of individuals and of the community often makes it advisable to forego some of the immediate comforts and pleasures for the sake of the future. Over-emphasis on the avoidance of effort and pain is an attitude fraught with dangers for the individual and even more for society; indeed, it amounts to social suicide.

Thus, medical philosophy at a high level transcends the problems posed by the care of the sick patient and must take into consideration the philosophical meaning of human existence. If we believe that the individual is but a link in a long chain of human adventure, and that the continuity of human life is our collective responsibility, then it is wrong to jeopardize the future of the group for the sake of today's comfort. Medicine is one of the highest forms of social philosophy because it must look beyond the individual patient to mankind as a whole. The more effective it becomes through scientific knowledge, the more it must concern itself with the long range consequence of its practices for future generations.

MULTICENTRIC PAPILLARY CYSTADENOMA LYMPHOMATOSUM (WARTHIN'S TUMOR) OF THE PAROTID GLAND: REPORT OF A CASE

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THE MORE common tumors associated with the parotid salivary gland have been the object of numerous investigations from both a surgical and oncological point of view. This is perhaps due to the remarkable variations which their histologic pictures may present.

Foote and Frazell(1) define papillary cystadenoma lymphomatosum (Warthin's tumor) as a benign tumor composed of a papillary epithelial component intermingled with well developed lmyphoid tissue commonly containing germinal centers. Albrecht and Arzt(2) in 1910 first separated the lesion as an oncologic entity, ascribing its histogenesis to heterotopic pharyngeal anlagen within lymph nodes located within the substance of and in juxtaposition to the parotid gland. Their published studies of this neoplasm showed conclusively that it should be regarded as a distinct histological entity, separate from other tumors arising as lateral cervical new growths such as the brancheogenic and dermoid cysts. Their contribution should have clarified the histogenesis of this interesting neoplasm. Unfortunately, this was not to be so. Subsequently observers classified the tumor under a variety of titles, apparently reflecting minor divergences in opinion regarding its origin, viz, branchiogenic papillary cystadenolymphoma(3), adenolymphoma(4), cystic papillary adenoma(5), and branchioma(6). Warthin's study(7) in 1929 managed to achieve some unanimity of terminology, the designation papillary cystadenoma lymphomatosum being generally accepted, and the eponym, Warthin's tumor, being used colloquially.

Plaut(8) analyzed 48 previously reported cases in the literature up to 1942 and added 16 previously unreported cases. He mentions only two instances of bilateral appearance of the tumor, one previously reported by Nino(9) and one reported for the first time in his own article. In 1943, Ramage *et al.*,(10) reported a case of bilateral adenolymphoma of the parotid gland; their patient had in addition *multiple* growths on the right side. In 1944, Martin and Ehrlich(11) reported on 22 additional cases of papillary cystadenoma lymphomatosum including three instances of bilateral growth and one instance of multicentric growth. Thompson and Bryant(12) surveyed the literature to 1950, finding 163 acceptable cases and adding 17 more from their own experience; they found 10 instances of bilaterality. Foote and Frazell(1) found three examples of multicentric tumor in 38 cases but supply no details. In 1956, Orloff(13) found 291 acceptable cases, classifying 10 as bilateral and as multicentric homolateral growths.

Approximately, 300 cases of papillary cystadenoma lymphomatosum have been reported in the world literature to date. The present case is presented because of its multicentric origin within the parotid gland and in homolateral paraglandular lymph node tissue.

Case Report

A 60-year-old white male was admitted to the surgical service of the U. S. Army Hospital, Fort McClellan, Ala., for treatment of a left facial mass. The mass had been present for approximately 10 years, during which time it had grown slowly in size. A second smaller mass appeared on the homolateral side approximately two years prior to admission. Some increase in the size of the smaller mass was noted during the weeks immediately preceding admission. Examination at the time of admission revealed an elongated mass located at the angle of the left mandible, and measuring 5 x 3 cm. The mass was not tender or mobile and had a rubbery, hard consistency. It appeared to be contiguous with the lower pole of the parotid gland. The second mass was located in the pre-auricular region of the face at the level of the tragus and measured 2 x 1 cm. Its physical characteristics were similar to that of the elongated mass.

Sialograms of the left parotid gland taken following admission revealed a moderately dissociated area located at the inferior pole of the parotid gland (Fig. 1).

Operation consisted of exposure of the left parotid gland by means of the classic "Y"-shaped incision about the ear with the extension

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of the inferior arm down onto the neck along the anterior border of the sternocleidomastoid muscle to the level of its insertion beneath the tip of the mastoid process. The upper tumor mass located in the pre-auricular region was found to be lying within the substance of the anterior lobe of the gland. The lowermost tumor mass was found in close association with the inferior pole of the parotid gland. Both tumors appeared to be well encapsulated. Following identification of the facial nerve trunk, the masses were excised with a generous portion of gland substance. An enlarged lymph node was found at the lower angle of the incision lying medial to the sternocleidomastoid muscle at the level of the inferior extension of the incision. This was removed at the time of surgery. The patient's postoperative course was uneventful. Follow-up sialograms one month after surgery were reported as being normal. Examination six months and one year postoperatively showed no evidence of recurrence.

The pathologist's report consisted of the following: "Sections from all three surgical specimens are similar (Figs. 2-5) in that the bulk of the tissue is made up of a tumor of two distinct histologic components. The epithelial component is arranged in papillary and cystic structures and consists of a double row of cells with a uniform granular pink cytoplasm. The inner layer is less regular, cubodial, and the nuclei are smaller and somewhat irregular in size. In the lumina of the cystic and tubular structures is a granular pink material containing some fragments. The epithelial elements are set in a stroma of dense lymphatic tissue containing germinal follicles. Each specimen is surrounded by a thin capsule. The subcapsular layer of the lymph node is what appears to be a lymphatic sinus. Pathologic diagnosis is papillary cystadenoma lymphomatosum of the parotid gland and of the resected lymph node."

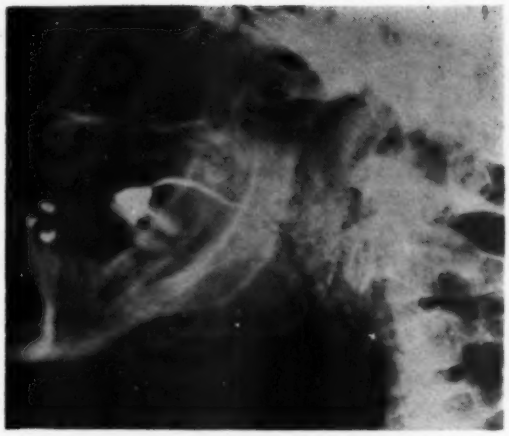

Fig. 1. Pre-operative sialogram of the left parotid gland. Lateral view, showing a moderately disassociated area in the inferior pole.

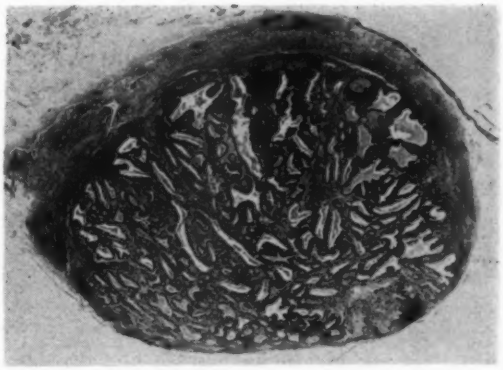

Fig. 2. Low power view of the lymph node showing the complex papillary structure of the tumor and its lymphoid stroma. A crescentic rim of preserved lymph node tissue is seen at the top.

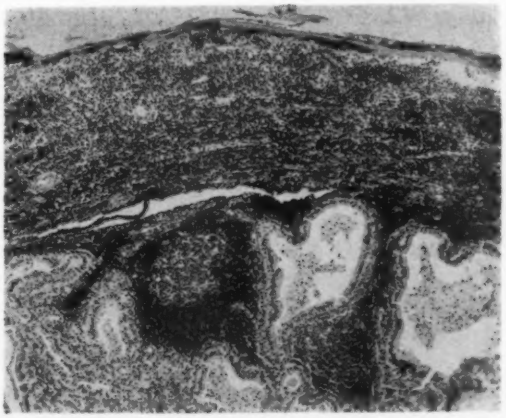

Fig. 3. Medium power view of the crescentic rim of preserved lymph node tissue showing the capsule, subcapsular space, and tumor deeper in the substance of the node.

Discussion

In a recent study of the histogenesis of papillary cystadenoma lymphomatosum, Thompson and Bryant(12) supported in essence the original postulate of Albrecht and Arzt(2). Based on detailed examination of embryos, normal human salivary glands, branchiogenic cysts, and 23 tumors, they concluded that the tumor arises from "neoplastic proliferation of parotid ducts included in lymph nodes during the course of

organogenesis." This is, in fact, an example of tumorigenesis in displaced cell rests during ontogeny. This view is borne out to some extent by Bernier and Bhaskar(15) in their excellent study on a large group of lympho-epithelial lesions culled from the files of the Armed Forces Institute of Pathology. In 1898, Neisse(14) described in 14 newborns salivary tissue within lymph nodes either within the substance of the parotid gland, or in lymph nodes adjacent to its capsule. Foote and Frazell(1) state that in surgical material from hundreds of radical neck dissections they "have frequently found salivary gland inclusions in lymph nodes external to and within the parotid gland. Usually the salivary gland tissue is entirely ductal, but acinar tissue may also be found."

Examples of this tumor reported as arising in the submaxillary gland must be discontinued; the close relationship between lymph node tissue and glandular tissue which is present in the parotid gland is absent in the submaxillary gland. Presumably, the proximity of the inferior aspect of the anterior lobe of the parotid to the posterior superior surface of the submaxillary gland is the site of origin.

The observation that a small but consistent percentage of these tumors arises as multicentric foci within both intra- and extra-glandular lymph nodes is consistent with an origin in embryogenetically displaced epithelial inclusion. The observation of bilateral tumors implies that the stimulus to tumor growth may be generalized rather than local. However, neither multicentricity nor bilaterality proves either point beyond peradventure of doubt. Multicentric origin of a benign tumor may be a "field effect." Bilateral occurrence may indicate merely that local stimuli are present on both sides at the same time. Conjecture about mechanisms of growth remain speculative so long as the stimulus remains undefined, even though the anatomic target is recognizable. It is of some theoretic interest that no example of a clinically latent papillary cystadenoma lymphomatosum, i.e., a "microtumor," should have been found in the many thousands of lymph nodes examined incidental to radical neck dissection, and that no case has been reported in which removal of a unilateral tumor was followed after a decent interval by the development of a contralateral tumor.

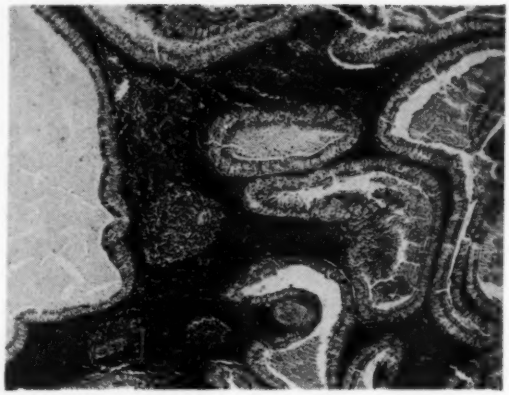

Fig. 4. Medium power view of a field from the larger of the two tumor nodules from the substance of the parotid gland. Spaces lined by a double layer of epithelial cells are separated from each other by a stroma of densely packed lymphocytes in which a few germinal centers are seen.

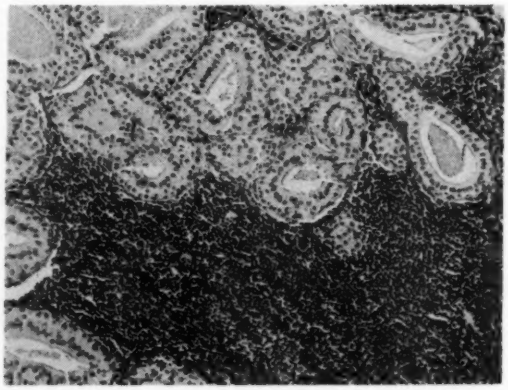

Fig. 5. High power view of a field from the smaller of the two tumor nodules from the substance of the parotid gland. The double layer of cuboidal epithelial cells with eosinophilic cytoplasm is clearly seen and the uniformity of the lymphoid stroma is apparent.

Conclusion

(1) A case of multicentric homolateral papillary cystadenoma lymphomatosum arising in the left parotid gland and in a nearby lymph node is reported.

(2) The occurrence of proliferative ductal epithelium within lymph nodes both as a primary neoplastic process and as a multicentric tumor growth is dependent upon the embryogenetic inclusion of displaced parotid ductal epithelium within the substance of lateral cervical lymph nodes.

(3) The anatomical proximity between the inferior portion of the parotid gland and the posterior portion of the submaxillary gland may be responsible for erroneously attributing neoplasms arising from the pariotid gland in this region to the submaxillary gland.

BIBLIOGRAPHY

1. Foote, F. W., Jr. and Frazell, E. L.: Tumors of the Major Salivary Glands. Atlas of Tumor Pathology, Section IV, Fascicle 11, Armed Forces Institute of Pathology, Washington, D. C. 1954.
2. Albrecht, H. and Arzt, L.: Papillare Cystadenome in Lymphdrusen. Frankf. Ztschr, Path., 4: 47-69, 1910.
3. Glass, E.: Uber ein branchiogenes papillares Cysto-lymphom der Regio parotidea. Frankfurt. Ztschr. Path. 9: 335-342, 1912.
4. Jaffe, R. H.: Adenolymphoma (onkocytoma) of the parotid gland. Am. J. Cancer, 16: 1415-1423, 1932.
5. Nicholson, G. W.: Studies on Tumor Formation. V. The Importance of Congenital Malformations in Tumor Formation. Guy's Hosp. Rep. 73: 37-64, 1923.
6. Ssobolew, L. W.: Zur Kasuistik der Branchiome. Frankfurt Ztschr. Path., 11: 462-465, 1912.
7. Warthin, A. S.: Papillary cystadenoma lymphomatosum, J. Cancer Res., 13: 116-125, 1929.
8. Plaut, J. A.: Adenolymphoma of parotid gland. Ann. Surg., 116: 43-53, 1942.
9. Nino, F. L.: Cistoadenolinfomas papiliferos des cuello. Bol. de Inst. de clin. quir., Univ. de Buenos Aires, 16: 271-289, 1940.
10. Ramage, J. S.: Binnie, G. G., McCall, A. J., Bilateral adenolymphoma of the parotid glands. Brit. J. Surg., 31: 189-192, 1943.
11. Martin, H. and Ehrlich, H. E.: Papillary cystadenoma lymphomatosum, S.G.&O., 79: 611-623, 1944.
12. Thompson, A. S. and Bryant, H. C.: Histogenesis of papillary cystadenoma lymphomatosum (Warthin's tumor) of the parotid salivary gland. Am. J. Path., 26: 807-849, 1950.
13. Orloff, Marshall J.: Benign epitheliolymphoid lesions of the parotid gland, papillary cystadenoma lymphomatosum and Mikulicz's disease. Int. Abst. Surg., 103: 521-541, 1956.
14. Neisse, R.: Uber den Einschluss von Parotislappchen in Lymphknoten. Anat. Hefte, Wiesbaden. 10: 289-305, 1898.
15. Bernier, J. L., Bhaskar, S. N.: Lymphoepithelial lesions of salivary glands. Cancer, 11: 1156-1179, 1958.

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TRANSITIONAL PROBLEMS FROM A TWO-YEAR TO A FOUR-YEAR MEDICAL SCHOOL*

Roscoe L. Pullen, M.D.

THE DECISION to expand the University of Missouri from a two-year program to a four-year program was reached after 50 or 60 years of heated debate in our state. The decision to expand was primarily based upon the fact that Missouri ranks number three in the United States in the number of people on welfare rosters, exceeded only by New York State and the State of Louisiana. These people on the welfare rosters, for the most part, live in small communities throughout Missouri. Missouri has a large number of small communities or farms for which there is an insufficient number of general practitioners to care for them. The state, after 50 or 60 years of organized effort and exchange, desired to expand the health program with the hope of recruiting more general practitioners for rural Missouri. There are sufficient doctors in St. Louis and Kansas City, and in the larger metropolitan areas of Springfield, St. Joseph and Cap Giradeau.

Now I could talk for two weeks, one hour, or 10 minutes, about the troubles of trying to expand from the two-year program to a four-year program. I want to emphasize the points already brought out by Dr. Hard and Dr. Bowers. First, there is no such thing as a two-year or a four-year medical curriculum, there is only a 40-year medical curriculum; it's a lifetime curriculum. Secondly, if a school begins as a two-year program, chances are that the organization will be along the departmental lines of anatomy, physiology, pharmacology, pathology, preventive medicine and micro-biology. The majority of the faculty will be Ph.D.s or professional teachers. Clinicians should be added on a voluntary basis to supply needs in physical diagnosis, and some other areas including psychiatry. If you should start with that type of faculty and expand to a four-year program, you immediately run into serious difficulties. This type of faculty, professional teachers, living on a campus of a university, want to follow the same rules and regulations as the rest of the faculty. This means a school year of nine months and then three months' vacation for the summer time and a vacation for the Christmas and other holidays. These professional teachers simply do not appreciate that M.D.s have to work at night and Saturday and Sunday. You will find immediately that friction develops in the faculty when you convert to a full time basis around the clock, 365 days a year. You will also be disappointed in the fact that the faculty of a two-year school can be of little assistance to you, as Dr. Bowers has brought out, in the organization of a university hospital. They simply do not understand the terminology and problems. When we started out, some of the men didn't even know what the word residency or internship meant. It is one of the most serious problems that you will face in the development of a medical center. I have no immediate answer to it, as no one else has at the present time.

I would like to point out to all of you, as members of the profession, that the American hospital is a community enterprise. It is among the five largest industries in the United States. The payroll of American hospitals can be compared to the U. S. steel industry. The American hospital is also an educational and service enterprise, and should encourage research in all phases of health. For its educational functions, the problem of training the ancillary health personnel, brought out by Dr. Bowers, is a very serious one, because practicing physicians need these individuals in their practice. This calls for the skills of all the people on the health team. Last year the U. S. Public Health Service published a manual on this topic, decided that there are 166 job classifications in this category at the present time. Nearly every one of these demand training in the university hospital or a teaching hospital.

Finally, I think we ought to look at the organization from the two-year to the four-year program with regard to something which has not yet been touched on this morning, e.g., from the point of view of the students themselves. The majority of our students are married. Married couples do not like to pull up stakes twice a

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year to move back and forth to the campus. And that's quite a job, especially when they have one or two children. So they prefer to get more or less permanently settled. So one has to think in terms of the student himself; they are changing also. Thank you very much.

CURRENT TRENDS IN MEDICAL EDUCATION*

John W. Cline, M.D.

THERE has been a great change in medical education in the past half century. Fifty years ago, practically all medical education was didactic. The student was lectured to by various members of the faculty. He was in no sense a member of the medical team.

This condition persisted in many places as recently as 25 years ago. Unfortunately, it exists to some degree in certain schools at the present time. As the medical schools are surveyed by teams representing the executive council of the AAMC and the council on medical education of the AMA, we find that some institutions still are living, in part, in the era of 25 years ago.

For more than 25 years, the trend has been away from didactic instruction and toward small group and bedside teaching. The student thus comes into more intimate contact with the patient and with the instructor. He gains far greater knowledge by this means than he would in the lecture hall. In his clinical years an effort is made to give him a sense of responsibility for patient care.

There also has been a tendency to treat the medical student as a mature graduate student, which he is. As such, he is responsible for a large part of his own education. Learning is an active and not a passive process and requires the effort of the individual to learn. "Spoon feeding" in medical education has been greatly reduced and further reduction will take place.

There has been a trend away from the concept that the student should acquire a vast number of facts which may be unrelated or poorly related. He should be, and to an increasing degree is being, taught to think in a logical manner. He is taught where and how he can acquire the information he requires, and how to use it after he has acquired it.

A limited amount of didactic teaching is valuable for the purpose of orienting the student in his endeavors and conserving his time. The bulk of lectures, however, should be devoted to the presentation of new material not yet available in the reference sources to which the student has ready access. It should be the student's responsibility to acquire the knowledge which can be obtained from standard reference works.

There has been a progressive departure from old structural concepts toward the concept of function. The hours devoted to gross anatomy have been reduced. Much more emphasis is placed upon the physiological and biochemical aspects of the human being in health and disease.

Increasing co-ordination of the teaching in pre-clinical departments is apparent. An effort is made to correlate the presentations by different departments to allow the student to relate structure and function, the alterations in both which are produced by disease, and thereby obtain a more complete picture. In some instances the faculties of different departments make conjoint presentations for the same purpose.

There is an ever-increasing relationship between the pre-clinical sciences and clinical medicine. Many clinicians now have broad knowledge of the basic sciences. They can teach portions of these courses and at the same time demonstrate the application of scientific knowledge to the actual practice of medicine. This is a stimulating experience for the student and gives obvious purpose to the hard work which the basic science courses require.

To a lesser extent, there is a tendency to draw upon members of the faculty in other departments of the university. Pure science, as opposed to applied science, has much to offer medicine. The chemist, the physicist, the geneticist, the statistician and others are called upon to assist in medical education.

It is customary to divide our medical schools into two categories; the research school and the practice school. Our more distinguished institutions belong in the former category. The existence of research programs enhances the academic atmosphere of the school and this is of benefit to the student. It is generally accepted that a portion of the responsibility of a medical

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school is to add to existing knowledge. This can be done only through research. It may well be that the teacher interested in research usually stimulates students to a greater extent than one who is not.

While research is a vital part of a medical school program, its extent will vary according to the availability of facilities and the number of the faculty interested in this activity and capable of carrying it on. Students may be stimulated to do some research and not infrequently a student may be temporarily or permanently diverted from his medical course to engage in research.

In some institutions, however, research has become a fetish. The primary purpose of a medical school is to train doctors to care for the sick. When one loses sight of this fundamental goal, the teaching program is bound to suffer. In some of our schools, research has become overemphasized and some of those engaged in it sneeringly refer to schools with well balanced programs and illustrious pasts as "trade schools."

Research is important, but it is only one aspect of the function of the medical school. If stressed to the detriment of sound scientific and clinical teaching, it will result in harm to medical education.

There has been a trend to introduce the student to clinical medicine earlier in his career. This tends to give him a greater interest and to lighten the load of drudgery of the preclinical years. If the student percieves the purpose of basic scientific training, he undertakes it with greater zest.

Recent years have witnessed a reduction in the required hours of the curriculum. When the student's time is occupied to too great an extent by required exercises, he has little opportunity for study, reflection and the pursuit of special projects in which he may have an interest. The councils invariably criticize curricula which require too many hours devoted to prescribed activities.

Some schools give free time to the student and permit him to use it as he chooses. Others require that the time be used for some serious purpose. Research is encouraged. In every class there is a limited number of students who have the capacity for research and an interest in it. Their interest may be stimulated and their capacity developed by this means.

The AMA council and that of the AAMC encourage experimentation in medical education. They are greatly interested in the quality of the product of our medical schools, but only to a limited extent in the method by which high quality is attained. There is no set formula for achieving a good result. One cannot be complacent about our present systems. Complacency leads to mediocrity and stagnation. The advances in medical education to date have been the result of the imagination and initiative of educators who were not satisfied to live in the past.

There are interesting experiments in medical education in progress at the present time. Some represent rather sharp departure from the "traditional" type. One such is found at Western Reserve and another of which you will hear more in the course of this meeting is at Johns Hopkins. One is in progress at Stanford. The results of such experiments are publicized and can be adopted by other schools or adapted to local conditions.

A new method is not necessarily good because it is new, nor an old method bad because it is old. The new and the old must be evaluated and their worth determined. Experiments should not discard methods of demonstrated value unless there is greater promise in new methods. Active curriculum committees are encouraged. They should study the curriculum content and methods of instruction almost constantly and recommend changes which they believe to be beneficial.

No one seems to be completely satisfied with the methods employed in choosing medical students. Applicants for admission are carefully investigated and screened. The methods now employed are reasonably good, but certainly could be improved. The important question is how this can be accomplished.

One must view medical education as a progressively evolving field of activity. It cannot afford to be static. We must seek to improve it, but in our zeal to do so must not lose sight of the fact that the primary function of a medical school is to train doctors. Other aspects of medical education are important, but must always be subordinated to the basic purpose of the medical school.

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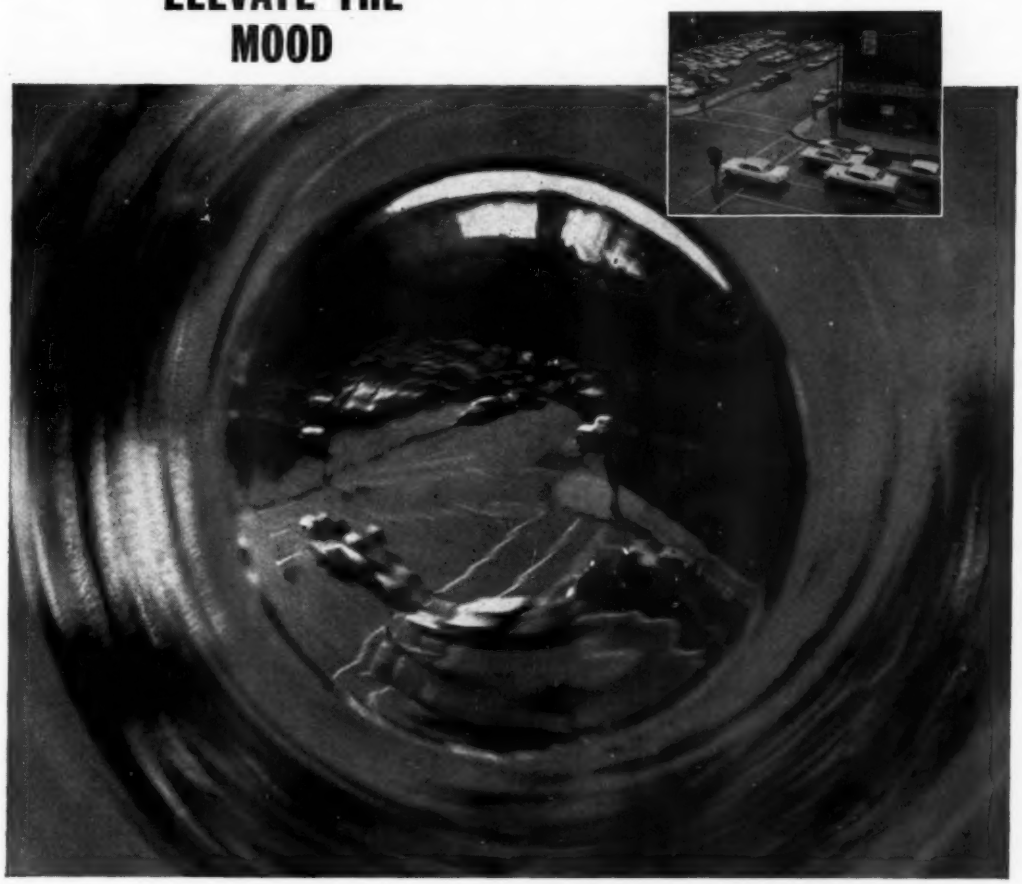

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Research in the Service of Medicine SEARLE

MEDICINE'S ROLE IN HUMANITY'S GREATEST ADVENTURE*

R. G. Gustavson, Ph. D.

DR. MELICK, Dr. Cline, and members of The Arizona Medical Association. When I received a very cordial letter from Dr. Melick inviting me to participate in this very interesting conference, I felt sure that he had written to the wrong Gustavson, because at the present time my interests are related to such questions as: Is there enough energy? Is there enough water? Is there enough land? What about the metropolitan problems of large cities? He insisted that I was the fellow he wanted, so here I am. I appreciate very much the invitation to discuss the very important problems concerned with medical education. I would like to put these problems in a setting which I will call, "Medicine's Role in Humanity's Greatest Adventure." This adventure is the attempt to live the good life in a world made good.

I have listened carefully to the very fine talks that have been given and as each man has spoken, it seemed to me that I could document what he said out of my own experience. Reference was made, for example, to our increase in population and its implications for medical education. This is a subject that is of great concern to anyone concerned with natural resources. Today we are witnessing an unparalleled population increase. In fact, of all the human beings that have ever been born, 5 per cent of this number are now alive. If Adam and Eve lived 2,000 years ago, and the population increased on the average of 1 per cent a year, the present world population of over some 2.5 billion can be accounted for. If they lived 5,500 years ago, and the same average of 1 per cent a year increase in population took place, the present population would be 10 to the 27th power. This tremendous number has not been reached because disease, starvation, and war, have kept the increase checked. Today modern medicine is making great inroads on the death rate from disease; modern agriculture is increasing our food supply, and we all hope and pray that another war may not be the lot of the human race. The death rates are diminishing the world over, the birth rate has not been altered significantly, hence the population explosion. This means more health services of all kinds.

Modern medicine is a child of modern science. It has been a good child in that it has also been a fine contributor to science. The great universities of our own country and of the world in general have nurtured basic science. For this reason, a strong medical school will usually be an integral part of a strong university. In my own experience, whenever the medical school is separated geographically from the university, neither institution is as strong as it could be.

In the world of science, man's greatest achievement has been the realization that he lives in a consistent universe; that is, if he asks nature a question by way of experiment at two different times and the conditions of the experiment are the same, nature will give identical answers on both occasions. The path from the concept of a universe ruled by caprice to the concept of law is a long and difficult one. Gradually a body of knowledge which we now call science has been established. Prof. Niels Bohr, distinguished atomic physicist of Denmark, has described this body of knowledge as resulting from "the finding of techniques that have enabled man to place limiting values on his preconceptions."

Aristotle and Galileo started with very different preconceptions. Aristotle's conviction that when bodies fall to the earth they fall with a velocity depending upon their weight seems common sense. This idea was generally accepted for thousands of years. Galileo thought that bodies fall with velocity independent of their weight. This did not seem like common sense. Galileo carried out a visual demonstration, according to tradition at least, by dropping bodies of different weights from the top of the Leaning Tower of Pisa so the students and professors of the university could see them fall side by side. The difference between Galileo and Aristotle was not primarily in the significance of their convictions, because if either conviction had led to the simple experiment of falling bodies, the true nature of the velocity of falling bodies would have been discovered. It is the technique which is important. This is the basic philosophy of science.

No Easy Task

To develop techniques that will place limiting values on our preconceptions is not an easy task. The experience of the physician, Jean van Hel-

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mont of Belgium, who was born in 1577 and who was touched with the new learning of Harvey, Galileo, and Bacon, is instructive. Van Helmont was a careful observer and an exact experimenter. He believed that water was the chief, if not the only ultimate constituent of all matter. He showed that plants could grow though they apparently received nothing but water, and so he argued that wood had been formed from water alone and that the carbon in wood came from water. He had an unknown factor in his experiment, only a small factor; one part of carbon in the form of carbon dioxide in 10,000 parts of air. Yet this small factor is the difference between finding truth and missing it.

Every physician is familiar with the difficulties of finding truth if several factors are involved. The cyclical charater of pernicious anemia is a case in point. One need only read the reports of Minot and Murphy on the treatment of the disease with liver to see how concerned they were about reporting positive results prematurely.

Finally prejudice, clinging to deep-seated convictions, can blind us to truth. The work of Scott as early as 1912 is a case in point. Scott produced experimental diabetes in dogs by removing the pancreas; he ligated the pancreatic ducts in other animals to bring about a degeneration of the acinus tissue; he then made extracts of these glands in which the acinus tissue had degenerated so as to prevent the presence of proteolytic enzymes and injected these extracts into the diabetic experimental animals. He observed a decrease in the urinary sugar, but because his animals developed a temperature, he concluded that his results were due to an artifact reaction which was the opinion of his professor. Insulin might have been discovered 10 years before it was discovered by Banting and his colleagues had not the preconceived notions prevailed.

But in spite of these difficulties, science has given us a remarkable control over our environment, and the thesis that I would like to speak about briefly is that medicine is the oldest of the arts and the sciences. Oldest in the sense that some of our oldest records, inscriptions, or carvings, relate to medicine. You can find, for example, a stone carved in ancient Egypt many years before the birth of Christ, showing a mother sitting with her baby who is apparently suffering from rickets, the sun in the background showing that the Egyptians knew something about the relationship of sunshine to rickets.

But medicine is also the youngest of the sciences. Let me briefly defend the thesis that every advance that has been made in the physical or the biological sciences, with very few exceptions I presume, has been reflected in advance in medicine. You remember, for example, that it was Lavoisier's discovery of oxygen that gave us a whole new concept of the burning process and the origin of heat. Lavoisier immediately turned his attention to the problem of the source of animal heat. It was necessary for him to perfect first a means of measuring heat, so with the aid of his great compatriot Laplace, he made an ice calorimeter. This calorimeter consisted of a double-walled can. In the space between the walls cracked ice was placed. This prevented any heat from reaching the interior of the can from the outside. In the interior there was placed a cage which would hold a guinea pig and this cage was packed in ice. The heat given off by the body of the animal melted some of the ice in the interior compartment and the water from this melted ice was weighed. Knowing the heat of fusion of ice he was able to calculate the amount of heat liberated by the animal.

Of course, arrangements had to be made for the in-go and out-go of air for respiration in another apparatus in which the carbon dioxide exhaled could be measured. He also determined the amount of heat and the amount of carbon dioxide from a burning candle in the same apparatus and in this way showed that at least 96 per cent of the animal heat came from burning carbon. This experiment was the beginning of the refined experiments carried out as a routine medical procedure in measuring basal metabolism.

Early Examples

If you look at the early work in organic chemistry, for example, you will see this same close relationship. I suppose every student of chemistry has read as the opening sentence in his organic chemistry: The first organic compound to be synthesized was urea, synthesized by Friedrich Wohler in 1828. It turns out that Wohler was a medical student under Brezelius in Scandinavia and that one of the experiments that Berzelius demanded of every medical student was to collect some of his own urine, evaporate it and then obtain in crystalline form,

the urea which was present. These were the days when Mitscherlich was a strong force in chemistry, a man who believed that crystal structure would help you determine formulas of compounds. So every medical student had to observe these crystals and draw them with great care. It was after that experience as a medical student in the laboratories of Berzelius, that Wohler was trying to recrystallize some ammonium cyanate. The ammonium cyanate which he obtained by crystallization was not the ammonium cyanate which he started with. It didn't have the same chemical properties. He examined it under the microscope. He states in a letter to Berzelius that it resembled the crystals of urea he had isolated in the laboratory as a medical student. This is the beginning of organic chemistry. If you look at the early work on the structure of fats by Chevreul in France, you have the beginnings of all of our interests in fat metabolism. The great work of Emil Fischer on the sugars was basic to understanding sugar metabolism. The basic work of Kossel and Fischer on the proteins and the purines turns out, of course, to be basic to much of the progress made in medicine. If you look at the discovery of the X-ray by Roentgen in the last part of the previous century, you are amazed at how quickly this became applied to the study of medical problems; and now with the studies of artificial radioactivity given to us by Joliot of France, we have again seen this reflected in the advances that we have made in medicine. It is a perfectly astonishing thing to see, for example, how the metabolism of the steroids is being unraveled. Here you have a very complex ring, a derivative, as you know, of phenanthrene with a five carbon ring added to it. What a complex metabolism these compounds must have! And yet real progress is being made. How? Take estrone, one of the female sex hormones, for example. The so-called "A ring" is an aromatic ring of typical benzene structure, which doesn't oxidize readily. Radioactive Carbon 14 is introduced into the A ring. The oxidation products will be found in the urine of a patient who has taken this material and may be isolated by extraction methods. These materials isolated from the urine are subjected to paper chromatography. The amounts of the different substances may be determined by the radioactivity of Carbon 14. It's perfectly amazing what detailed information one can obtain by these latest advances. In the paper presented yesterday, dealing with the chemistry of Cushing's disease, (some of you commented on the complexity of modern chemistry) you were seeing a reflection of this basic work in science.

And today, of course, the progress that is being made in the biological sciences, especially in microbiology, is having a tremendous influence on the information that we have for the practice of medicine. Take, for example, the problem of placing an oxygen atom on Carbon 11 of the steroid ring. The organic chemist would have great difficulty in placing an oxygen atom on this particular carbon atom and nowhere else. But think of the tremendous simplicity that has been arrived at in finding a micro-organism that will take oxygen from the air by processes quite unknown to us, producing a 92 per cent yield of the Oxygen 11 compound. This is not small potatoes. Upjohn, I am told, sold $33 million worth of this compound last year without, as far as I know, splitting any of the dividends with the bug who did the work. We could go on and point out these close relationships between the basic sciences and progress in the field of medicine, but this would merely be preaching to the converted. What significance does it have for the problem that is being discussed at this conference? A number of speakers have said a strong medical school must find its home in a strong university, because the relationship of the basic sciences to the medical sciences is so important. I have tried to give this same command from history.

Another Problem

Now let me turn your attention to another problem that you discussed in the conference that we have had today. There was some concern expressed over the fact that the quality of the medical student has not been improving. This is a very serious problem. You might also be interested in knowing the results of examinations that have been given for various scholarships and fellowships that are under the control of the National Research Council. Measured by the general examinations, you will find that the people who are taking the exams in physics and chemistry and mathematics rank high. Students in the general field of biology rank much lower. Why? This requires some concern when you remember many scientists believe that the next great fundamental breakthrough in science is going to be in the biological sciences, a breakthrough which will probably be even greater

than the breakthrough we had in connection with the physical sciences, atomic structure, and atomic fission.

How are we ever going to achieve such breakthroughs or make our contribution to it as a nation if these tests represent the quality of people in the reservoir from which we are to draw our biological sciences? I think this had something to do with high school education. We have traditionally given a course in biology to the ninth grade student; it has been descriptive biology. This is followed by physics in the junior year and then chemistry in the senior year. What kind of advice is being given to students by counsellors? They have indicated that if the student was good in mathematics or good in physics or chemistry, he should be a physicist, a chemist, or an engineer. If he could draw well and was interested in biology, he was advised to take up biology because biology was morphology. This is not modern biology. Modern biology is molecular biology; it is dealing, as you well know, with dynamics of the living cell. There is probably no better way to obtain fundamental information about the living cell than by using the tools of physics and chemistry and mathematics. So there is no greater opportunity before the youngster of tomorrow, if he loves physics, chemistry, mathematics, or, in other words, if he likes to think logically, than in the field of biology. And it seems to me this calls for a revision of the high school curriculum and high school counselling. Biology in the ninth grade will give the student a picture of the living world, including some basic knowledge of biological evolution. This can be largely morphological. In the second year, chemistry; chemistry has concepts that are relatively simple at that stage and the mathematics is certainly not beyond sixth grade mathematics. Then physics in his junior year. By that time the student will have accumulated a knowledge of algebra that will enable him to approach the problems in physics with a new tool. And then in the senior year, an opportunity to take a number of electives, but among them a second course in biology, where the student will be given the opportunity to learn something about the dynamics of living cells; to have some knowledge of enzyme action, for example; perhaps to extract a leaf for the green-coloring matter; to submit this to chromatographic analysis, which is simply done with paper, and let him see that this simple process separates out a series of compounds. In other words, let's give him a picture of modern biology so that when he goes to the university he will have an opportunity to see that science today is pretty uniform in its basic demands, and the opportunity to use all of the physics and all of the chemistry and all of the mathematics that he can gather together can be applied to the more complex problems of biology and this, of course, means basic support for the field of medicine.

I was interested in the comments that were made by Dr. Cline in his remarks this morning about the tremendous importance of having teachers who were not teaching didactically, who do not stand before the students and read a book to them; but teachers who were really stimulating the student to learn and discover for himself, something which Dr. Turner and others emphasized in their talks. And as they were talking, I could not help but think of one of the greatest teachers that it has been my privelege to have and to work with, namely, A. J. Carlson of the University of Chicago. Anyone who took his physiology courses in the medical school, or as a graduate student, dealing with blood and circulation, could repeat for you that opening day's lecture, where he would say, "I am not going to tell you what is in the textbooks, this is an insult to your intelligence. I am not going to tell you what you will find in the laboratory, this will dull your curiosity. I am here to give you the spirit of physiology." And this is what he gave us.

The question of establishing a school of medicine in a state is a large question, fraught with many problems. At this conference, some of the broad outlines of some answers to these problems have been given. Should a school of medicine be established? Where should it be located if the decision is to establish one? What kind of a hospital should be associated with it? How can the best possible relations be established with the practicing medical profession? How many full-time professors will be needed? What limitations should be placed on outside practice of the full-time faculty? What should be the position of a part-time faculty? What remuneration should they receive? What is the place of research in the proposed school? What opportunity should be given for graduate work? How much will a good institution cost? The American Medical Association and the Association of

American Medical Colleges will not recognize a poor school. What answers can be given to these questions? The worst thing that can be done is to try to answer these questions on the basis of political numbers. A medical school is not a trophy for a chamber of commerce. A careful, intelligent survey is strongly indicated. Freud said, "The voice of the intellect is a very gentle voice, but it is a very insistent one." Let us listen to that voice. George Eliot also spoke words of wisdom when she warned us not to be optimists, because an optimist can be unrealistic with respect to what we can achieve. Let us not be pessimists, because that would mean we have no faith in the future. Rather let us be ameliorists, that is, if things are not as they ought to be, everyone will lend his hand, his head and his heart to make them right. This counsels patience.

Let me close by saying I lived through the struggles at the University of Colorado as president of that institution, where we had great difficulty in adjudicating misunderstandings between the practicing profession and the medical school. I lived through it again at the University of Nebraska. I saw the struggle as it took place at Chicago. Let me make this suggestion to you. There is a tremendous amount of wisdom to be distilled out of these experiences; there is absolutely no need for you to relive these experiences. Consult with the people at the Universities of Colorado and Nebraska. There is much help to be found there.

God bless you in your efforts. Thank you.

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THE FOUR-YEAR MEDICAL SCHOOL*

John Z. Bowers, M.D.

ARIZONA is to be commended that her physicians are taking such a serious interest in the problems relating to the establishment of a medical school.

The beginning of a two-year, but particularly a four-year program, brings a medical school and its faculty, both pleasant and unpleasant dealings with the local medical profession. Medicine has been harmed by the conflicts that have erupted recently in various communities between the medical profession and medical education. Some of the figures that Doctor Hard showed us on the decline in the academic excellence of students coming to medical school are based in part upon what I might call "poor public relations" of medicine. Bilateral-communications and understandings are needed. I would impress upon you the importance of medical schools and the medical profession working together, particularly in the beginning years when hostilities can appear.

The trend in medical education in the United States today is to the four-year medical school. During the past 10 years, a number of two-year schools have moved into four-year programs. Why has this occurred? I think that one of the important factors relating to it, is the concept that has arisen within the United States in the last 15 years, of the medical center. And let me suggest that Arizona, in considering the initiation of a program in medical education, should not be thinking just about the problems of a two-year or a four-year medical school. It seems to me your problem is far broader, far more intriguing and of far greater significance than a two or three-year medical school. Your fundamental concern should be, does Arizona need a medical center? The medical center concept includes education, service, and research. It includes a number of educational areas in disciplines beyond the education of medical students. It includes the training of intern and resident physicians. In passing, let me note that good intern and residency programs can do a great deal to attract fine young men and women to practice in a state. There is a real "Westward, ho" movement going on among our medical school graduates today. In the last senior class at a Midwest

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university medical school, over 70 per cent of the graduating class applied for internships on the West coast. We see this at Wisconsin. I have wondered why more students do not go to Arizona for internship. I suspect that you have not recognized the role of internship and residency programs in attracting physicians. You should exert more effort and attention to developing good intern and good residency programs. One aspect of the medical center program is the preparation of nurses in the baccalaureate programs. We spend a great deal of time worrying about why we cannot find nurses to do bedside nursing. Why are our nursing schools said to be turning out administrators of nursing, rather than nurses? Nursing education is a vital force in helping our country today. A medical center for a state should train nurses. Does Arizona need a greater supply of nurses? A nursing school in a university setting can help a great deal in this manner.

What are some of the other educational programs that one accomplishes in a medical center? The training of physical therapists is an important program in a medical center as is the training of occupational therapists. These two important groups work very effectively on the health team, in rehabilitation. Occupational therapy is certainly an essential part of the team in psychiatry.

The medical social worker is an individual of growing importance in medicine. A modern medical center is also interested in contributing, as Doctor Cline pointed out, to the original fund of knowledge. We, therefore, find research programs to be of growing importance. Research is the spark in medicine today.

Medical care today, and I hope even more so in the future, is a team problem.

University hospitals and private hospitals use the nurse, the physical therapist, the occupational therapist, the medical social worker, the medical technologist, the dietitian, the X-ray technician, and the clinical psychologist. All of these fields are essential to the total health development and effort of a state. Arizona should review its needs in a wide variety of health professional areas, rather than simply medicine.

Research and Hospital Programs

I subscribe to Doctor Cline's comments about research and the problems that it raises; but can one attract a good medical school faculty today, either two-year or four-year, without having research as an essential component of the medical program? One must realize that the public pressure on medical schools to carry on research programs is great. The congress of the United States has added a number of millions of dollars to the appropriation for the National Institutes of Health, beyond the figures that were recommended by President Eisenhower. The congress, representing the people of the United States, are deeply devoted to medical research. Large amounts of money are made available, and medical schools are certain to be active in research programs.

An important aspect of the development of a four-year medical school and the major change which occurs between a two-year and a four-year program, is the need for clinical material and the development of hospital programs. University presidents often say that medical schools would be more easy to live with if it were not for the need of a university hospital. The responsibility for clinical activity and the undertaking of hospital management changes the operation of a medical school. Now what are some of the problems a four-year medical school offers medical care, bringing the school into active public service? One of the key problems about a hospital teaching program is the cost that is entailed. The cost of operating a hospital and the cost of manning clinical departments is a highly significant one. The hospital costs are soaring today. In a state university hospital, the bill is paid by the legislature, and legislators are often shocked at the cost of running a university hospital. One does not rely solely on university operated hospitals; one also has to undertake teaching programs in other hospitals. In psychiatry, the feeling today is that medical students need experience in state mental institutions. Medical students may need experience in tuberculosis hospitals. The need for access to rehabilitation programs, and to other specialized disease areas, multiples the problem of the four-year medical school in its hospital relationships.

Another development that compounds the problem of the four-year medical school is that the teaching program has moved away from the classroom and onto the ward. Today the lecture room plays a lesser role in our clinical teaching programs. A four-year medical school needs access to an adequate supply and variety of clin-

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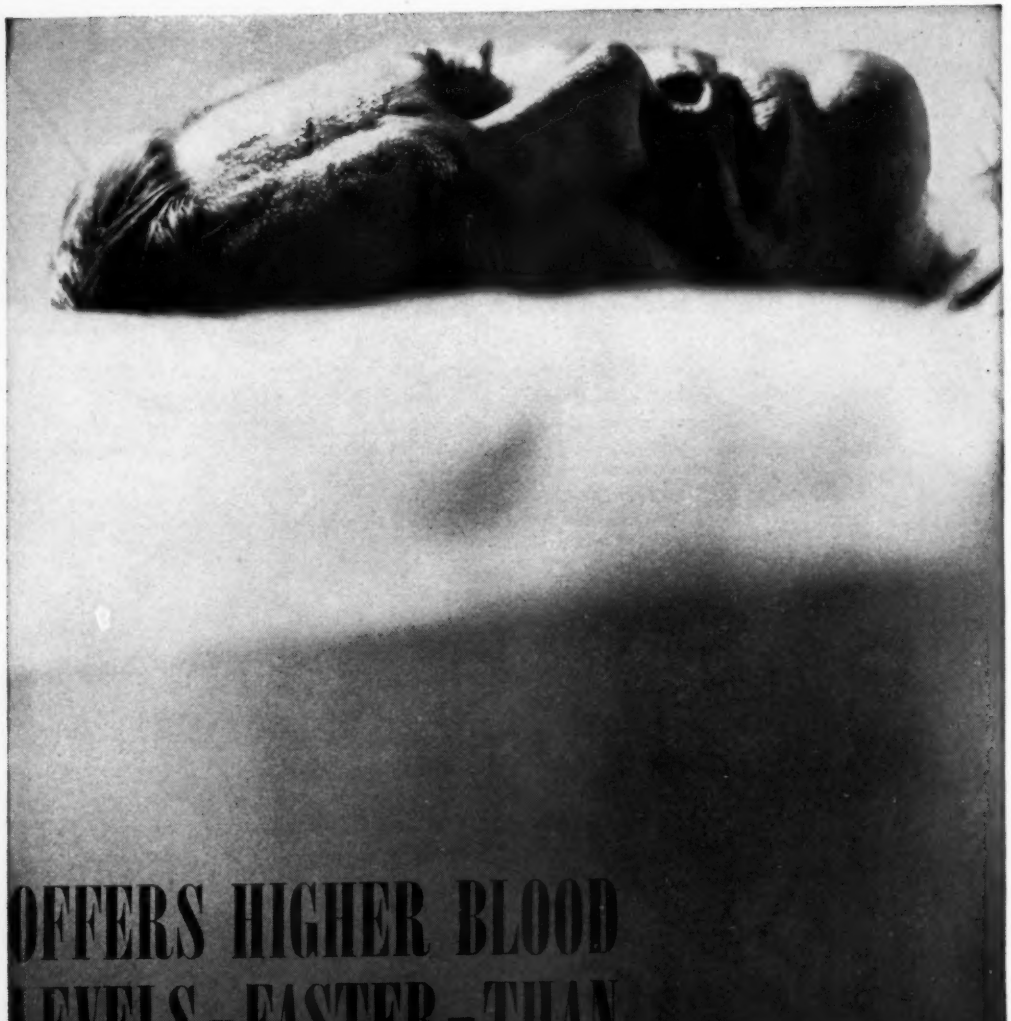

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ical material in its teaching hospitals. This is most important. The education of a junior student is primarily oriented to the bed patient. A junior medical student cannot listen to a heart for two or three minutes and decide whether there is a mitral-systolic murmur or an aortic-diastolic murmur. He needs an opportunity to go back to the patient, he needs to have an instructor to go back with him. He needs to have that patient where he has easy access to him.

In the senior year, the major teaching effort in many schools is in the out-patient department, so that it is important that in any talk about a four-year medical school, one recognizes the need for access to out-patient material. In most instances this has been primarily indigent material. The teaching of clinical medicine is undergoing very great changes because many of our medical schools face problems in an adequate supply of teaching material. The number of indigent patients available for teaching has been steadily declining. The number of patients who have insurance coverage grows steadily. Our teaching, therefore, is being oriented toward the private patient. I might say in passing that I have never heard a private patient complain about association with a medical student. The major complaint in my experience has been from the faculty members, who do not like to have their private patients used in teaching.

A four-year medical school should have its clinical departments primarily manned by a hard core of full-time or geographical full-time men and women who are in the medical school and the teaching hospitals. The use of volunteer or part-time faculty can be of great value. The size that clinical departments assume today is staggering. There are areas of very serious shortage in the clinical programs. Psychiatry, radiology and anesthesiology are in short supply. Let me make two final points. First, in the move from a two-year to a four-year program, the number of young men and young women applying for medical school, rises rapidly. A state will be able to attract a far larger number of young men and women into medicine if it operates a four-year medical school program and a complete medical center as compared to the two-year program.

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ARIZONA MEDICINE
Journal of
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VOL. 16 OCTOBER, 1959 NO. 10

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.
7. Exclusive Publication—Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notifed within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.
8. Illustrations — Ordinarily publication of 2 or 3 illustrations accompanying an article will be paid for by Arizona Medicine. Any number beyond this will have to be paid for by the author.
9. Reprints — Reprints must be paid for by the author at established standard rates.

The Editor is always ready, willing, and happy to help in any way possible.

(The Opinions expressed in original contributions do not necessarily express the opinion of the Editorial Board.)

THE ANCILLARY WORKER IN OPHTHALMOLOGICAL MEDICAL PRACTICE

THE OPTICIAN

A RECENT pamphlet published by the National Medical Foundation for Eye Care defines the services of the optician and his relation to the ophthalmologist and outlines some of the legislative pitfalls which might befall him in the future.

In the modern practice of medicine, the physician is aided by numerous technical assistants who, when classified, fall into one of some 60 different ancillary groups. Some ophthalmological technicians include the orthoptic technician, the optician, a contact lens technician or an ophthalmic assistant. These technical workers help the physician render medical care to more people than he could serve working alone.

Dispensing opticians are ancillary medical workers, who although acting on the orders of and responsible to the physician, are engaged in a technical service occupation as an independent business. The dispensing optician who does nothing more than fill the prescription of an ophthalmologist with regard to glasses should be identified from the refracting opticians who, since the turn of the century, have been known as optometrists. Physicians prescribe over 50 per cent of the eyeglasses in this country, and the dispensing optician will supply over half of the glasses prescribed by the physician. This makes it evident that the dispensing optician is an essential and important ophthalmological ancillary medical worker.

His continued existence and ability to function, however, are threatened by various actions and proposals originating with optometry. This has resulted from perversion of the laws regulating optometry either through interpretation or amendment. Laws adopted for the regulation of optometry have commonly defined optometry as the measurement of the powers of vision and of optical defects of the eye without the use of drugs and the adaptation of lenses and prisms to correct these defects. This describes the serv-

ices of a refracting optician. No optometric law has described the practice of optometry as the supplying of glasses fabricated in accordance with the prescription of a physician, and yet attempts have been made in a number of states to subject the optician to the jurisdiction of boards of optometry by interpreting certain clauses to mean that the dispensing optician who mechanically fits glasses (frames) is practicing optometry. This is a perversion of the intent of the legislation which opticians understandably look upon as inequitable and which physicians can only regard as an unjustifiable interference with the functions of ancillary medical personnel. This interpretation of the law would require the optician to have an optometric license to carry on his business. This seems absurd since the optician exists to carry out the orders of the physician. Legislation of this sort will ultimately deprive the physician of the services of the optician by eliminating the optician from the scene.

Legislative or court action against the optician or any other ancillary medical workers such as this is actually and should be recognized as an attack on medicine. The medical profession cannot escape its moral obligation to protect the paramount public interest and to defend its own legal rights. If the optometric boards have jurisdiction over opticians, it may mean the regulation of an ancillary medical worker by a group which is in no way concerned with the furnishing of medical care, or in any way a party to the rendering of medical services. It is evident, therefore, that any legislation which affects the dispensing optician is a prime concern not only to the public, but to the medical profession. The physician can control the standards of eyeglasses and determine their acceptability by the process of inspection and acceptance. But he cannot supervise the optician if the latter is eliminated from the scene by legal procedure.

Licensure laws, if they are necessary, should clearly apply only to the dispensing optician operating an optical dispensing business and the dispensing opticians in his employ.

A.K.H.

ARIZONA MEDICAL ASSOCIATION MEDICAL PAPER AWARD

THE planning committee for the annual state medical meeting of the Arizona Medical Association to be held in April 1960, has announced that it will present an award for the best paper submitted for publication and presentation at the annual meeting. The paper to be written must be by a practicing physician in Arizona, or one serving on the house staff of one of the hospitals in this state. It is contemplated that all papers submitted will be reviewed and the majority published in *Arizona Medicine*. The paper deemed most superior by the program committee as to manner of presentation, thoroughness of review of subject material, and originality of content is to receive an award at the annual meeting and will be read by its author as a special part of the scientific program. Further details will be listed in future issues of the Journal.

REGISTRATION — 1959 ANNUAL MEETING

County Medical Society	Total Membership	No. of Members Registered	Per Cent of Members Registered
Apache	2	1	50
Cochise	26	3	12
Coconino	21	4	19
Gila	22	3	14
Graham	7	3	43
Greenlee	7	1	14
Maricopa	548	144	26
Mohave	2	1	50
Navajo	8	3	37
Pima	264	51	19
Pinal	29	14	48
Santa Cruz	8	0	0
Yavapai	21	7	34
Yuma	32	3	9

Non-members, including guest orators, VA, interns, residents, out-of-state doctors, etc. 63

Total Registration of Medical Doctors 301

(Editor's note — This is a poor representation at our annual meeting. Recommendations for improvement of the program and development of added interest in these sessions are invited.

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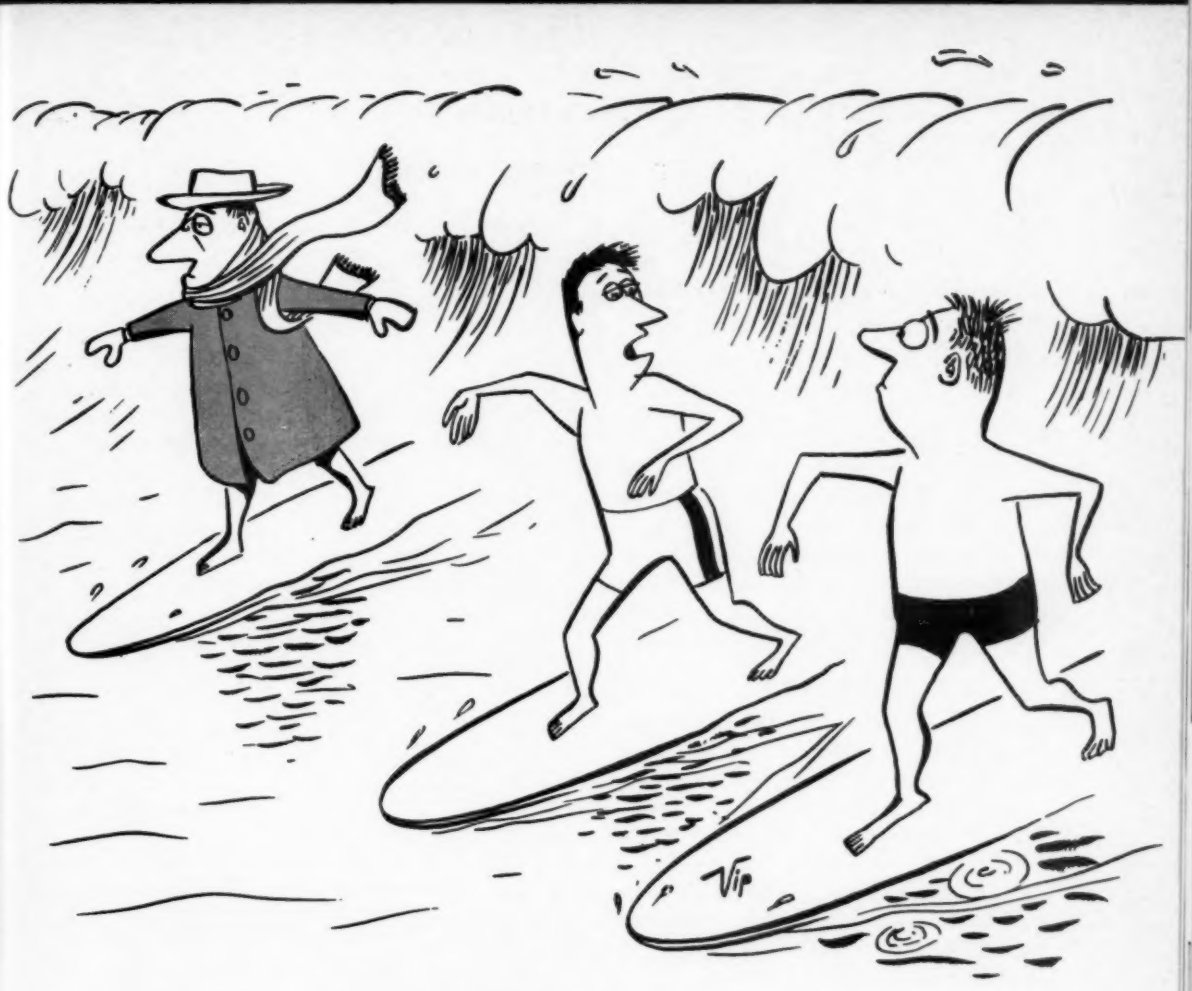
products	indications	ingredients	dosage
CITRA FORTE CAPSULES (New)	When a narcotic is indicated for colds	Cough Suppressant / Antihistamines / Decongestant / APC / Ascorbic Acid	2 capsules immediately, then 1 capsule every 3-4 hours
CITRA DEL CAPSULES (New)	Prolonged action cold treatment	Decongestant / Analgesic / Antipyretic / Antihistamines / Ascorbic Acid	2 capsules immediately, then 1 capsule every 8 hours
CITRA NASAL SPRAY (New)	Relief of congestion in colds rhinitis, and sinusitis	Antihistamines / Antibiotic / Decongestant	Spray one time into each nostril and repeat after few minutes.



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products	indications	ingredients	dosage
CITRA FORTE SYRUP	For complete cough control	Cough suppressant / Antihistamines / Expectorant	1-2 teaspoonsful every 3-4 hours
CITRA CAPSULES	For relief of the common cold	Decongestant / Analgesic / Antipyretic / Antihistamines / Ascorbic acid	2 capsules immediately then 1 capsule every 3-4 hours
CITRA SYRUP	For less severe and children's coughs	Cough suppressant / Expectorant / Antihistamines / Decongestant / Ascorbic Acid	1-2 teaspoonsful every 3-4 hours
CITRA H.F.	Hay Fever	Broadspectrum Antihistamines / Vasodilator	2 capsules immediately then 1 capsule every 4 hours

LETTER TO THE EDITOR

William S. Clark, M. D.
Director of Medical Care
The National Foundation (For Everything)
800 Second Avenue
New York 17, N. Y.

DEAR Doctor Clark:

I have your letter of May 20, 1959 with the copy of the Broadened Chapter Patient Aid Program of the National Foundation. I am writing this letter to challenge your sentence in the second paragraph in your letter, in which you state, "I hope that you will agree that these new policies are medically and financially sound."

Doctor Clark, I do not agree that "these new policies are medically and financially sound." It is incomprehensible that such policies could have evolved from "conferences with medical advisory committee representatives." These so-called representatives betrayed the medical profession by putting no value on the physician's services. This, I will explain soon. The National Foundation should have polled the opinions of all of the doctors who afford medical and surgical care to the patients who suffer with poliomyelitis, virus diseases, arthritis, birth defects, etc. The Foundation should have asked these doctors if they are willing to offer their services without thought of expecting compensation.

To get to the point of my argument, I note on page 7 of the brochure, "The Broadened Chapter Patient Aid Program of the National Foundation" – "What are prohibited chapter expenditures?" And there, first in line, slapping me in the face, is "Medical and surgical fees." Again, the same prohibition of medical and surgical fees confronts me on pages 10 and 12.

You piously intone about the wonderful things the National Foundation is going to do for the unfortunate sufferers of the encyclopedic catalogue of diseases; and the Foundation accepts contributions from people who believe that "their doctor" will be compensated for his services if one of their family is stricken with any of these diseases. Dr. Clark, isn't the Foundation being extremely generous with my services and talents, as well as those of my colleagues? Or is it now considered old-fashioned for a doctor to expect to be paid a reasonable fee for his services?

Your Broadened Chapter Patient Aid Program has committed the National Foundation to *patient care*, as well as your admirable program for research, education, etc. But who is the most important person in the care of the patient? His doctor, of course! The program provides as permissible chapter expenditures hospitalization. Who admits, examines, writes histories, physical examinations, progress notes, does diagnostic spinal punctures, orders medications, x-rays, orders and interprets laboratory tests, and prescribes physical therapy and braces and splints? You can be damned sure it isn't one of your executive secretaries. If the services of the physicians have no value to the Foundation, then the Foundation should not deceive the contributing public into believing that the "broadened program" will provide medical and surgical care.

It is with some sadness and regret that I am impelled to submit my resignation as a member and chairman of the Medical-Advisory Committee of the Yuma County (Arizona) Chapter of the National Foundation. I have enjoyed my work and the warm association of the other volunteer workers for the past 15 or 20 years. I hope that they will continue their services to the sick; but I cannot continue my work with them because I have espoused a principle that a physician is an honorable man and that his services deserve some compensation.

In the third paragraph of your letter, you state that, "Your assistance will be needed in explaining to physicians and others the meaning and objectives of the new patient aid program." I cannot, with good conscience, face my colleagues and comply with your request.

This letter is written by a man who believes that he is sincere, and who has not become rich from fees extracted from the unfortunate sick. I am proud of my chosen profession and my ideals and will continue to defend my colleagues who share these ideals.

Sincerely yours,

A. I. PODOLSKY, M.D.

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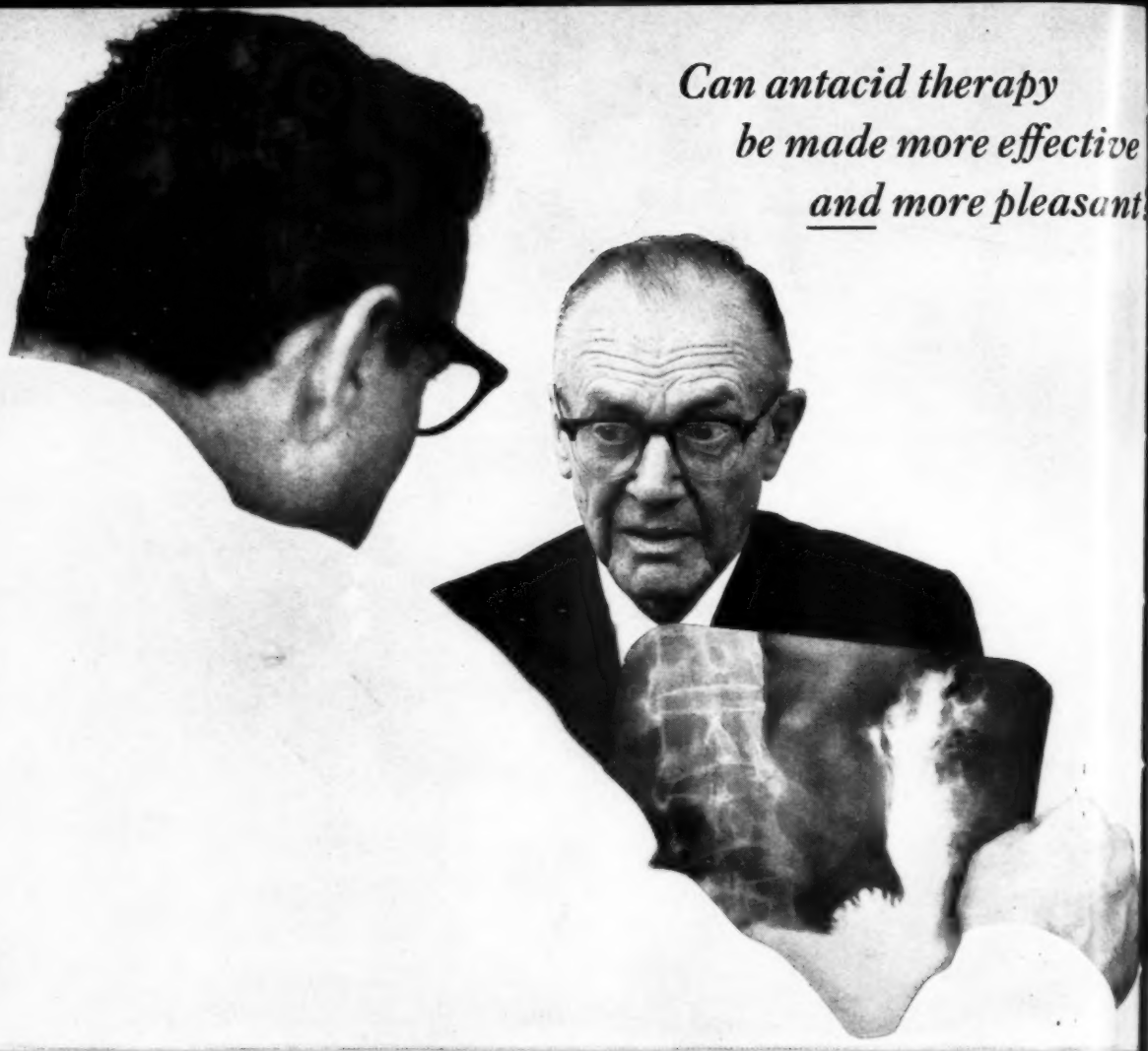

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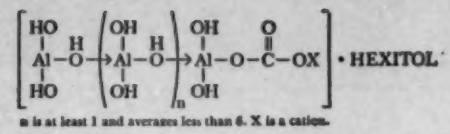

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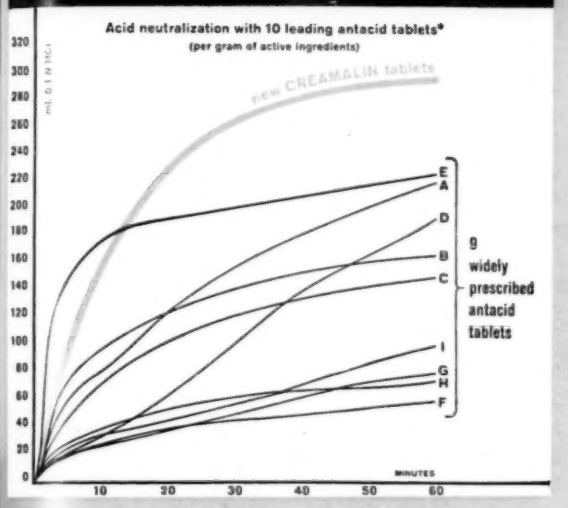

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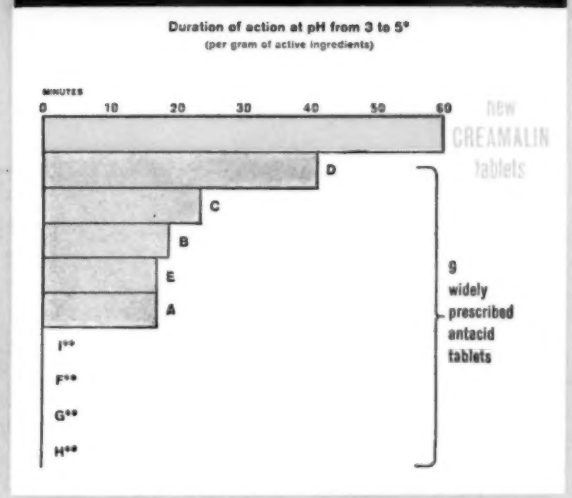

*Hinkel, E. T., Jr., Fisher, and Tainter, M. L.: A new highly reactive aluminum hydroxide complex for gastric hyperacidity. To be published.
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OBITUARY
DR. R. O. RAYMOND

R. O. Raymond, M.D.

DR. RAYMOND was born in Huey, Ill., on Sept. 5, 1876; he died in Phoenix, Ariz., on July 6, 1959. He received his degree in medicine from Washington University Medical Department in St. Louis, Mo., in 1899.

After several years practice in St. Louis, he moved to Arizona where he was licensed in 1904. He first located in Williams, and in 1906 moved to Flagstaff. He established the Milton Hospital, which was the first hospital in Flagstaff and was located in close proximity to the Arizona Lumber and Timber Company. For many years he had charge of the medical and surgical care of the mill employes there, and he also conducted an extensive practice in the community and the northern part of the state.

Dr. Raymond became interested in the cattle and sheep business, which was one of the mainstays of this region in Arizona. When his vision began to fail, he disposed of the hospital to his associates Drs. A. H. Schermann and M. G. Fronske, continuing only a limited private practice. His holdings in sheep and cattle were a most satisfying outlet for his energies as his handicap gradually impaired his ability to care for his medical practice.

In 1945 he sold his sheep holdings and established a winter home in Phoenix to escape the rigors of the Flagstaff winter climate. His winter home, surrounded by a moderate acreage of citrus, was again an outlet for his thought and energies as well as a proving ground for many original ideas about plant and tree growing. To his many friends he was ever the gracious host, and during the winter months which he spent in Phoenix, he was always glad to have them come for a visit. On these occasions he was most liberal in supplying them with an abundance of fruit and dates from the orchard.

Dr. Raymond never married. He is survived by an older sister and several nieces and a nephew.

During his active practice, Dr. Raymond made frequent visits to the Mayo Clinic and many other medical centers east and west to keep abreast of the advances in surgery and medicine. He had a keen mind with a searching tendency for new ideas and methods in the fields of medicine and agriculture. An avid reader, he was constantly consulting the book reviews in the Journal of the AMA. His interest in medical matters never failed. Although unable to read, he subscribed to medical journals and had them read to him by readers or his friends, as well as by means of long playing records. The same was the case with new medical books which he chose from the book reviews. All his life he kept buying books for himself and presenting many to his younger physician friends.

Dr. Raymond's interest in animal and plant life is evidenced in many ways. As we drive along the Oak Creek road from Flagstaff we see large stretches of wild yellow clover which he spread with his own hands as he roamed over the country. He was an expert in feed grasses and although his vision was impaired, he would identify them by touch of stem, leaf, or root. He presented to the state a large tract of land between Flagstaff and Winslow for a buffalo and antelope reserve. A beautiful wooded spot about seven miles out on the Oak Creek road with a cool spring called Lindberg Spring was also a gift to the state for the pleasure of picnickers and campers.

Year after year, Dr. Raymond was the unknown benefactor of many a needy family. He not only financed many cases for special medical care, but also gave aid to other types of distress cases. He contributed to many civic welfare activities and churches, again almost invariably anonymously. The present hospital site in Flagstaff was made possible through his efforts.

Dr. Raymond was always devoted to his patients and spared no effort to give them every care and consideration possible. He was beloved by his patients and by his colleagues in the medical field, and will ever be remembered as a good doctor and a good friend.

M. G. FRONSKE, M. D.

HOSPITAL BENEFIT ASSURANCE

HOME OFFICE: FIRST STREET AT WILLETTA · PHOENIX, ARIZONA · ALpine 8-4888

MEDICAL DIRECTOR
DUKE R. GASKINS, M. D.

September 25, 1959

Dear Doctor:

I thought some figures recently released by the Arizona Insurance Department might be of interest to you.

Did you know that at the end of 1958 there were 100 legal reserve life and accident and health companies in Arizona?

Although H.B.A. was only one of 100 Arizona companies, we paid 24 per cent of the total benefits paid by all Arizona companies during 1958.

We paid more benefits than the next highest three companies combined and nearly as much as the next four!

The splendid cooperation which each of you have given us since our inception in 1944 has contributed immeasurably to this story. We invite your suggestions as to ways in which we can further improve our service.

Very truly yours,

Duke R. Gaskins, M.D.

Duke R. Gaskins, M.D.
Medical Director

DRG:ld

Topics of Current Medical Interest

ARIZONA POISONING CONTROL INFORMATION CENTER

PHOSPHATE ESTER INSECTICIDE POISONING

A SEVERE case of poisoning from an organic phosphate ester insecticide was recently reported to the Arizona Poisoning Control Information Center(1). This poisoning incident involved a 43-year-old white farm worker who was treated at an Arizona Hospital Poisoning Control Treatment Center. When admitted to the hospital, the poisoning victim was found to be acutely ill and displayed the following symptoms: Extreme miosis, salivation, dyspnea, profuse diaphoresis, abdominal cramping, and extreme muscular pain in the arms and legs. He showed typical signs of pulmonary edema with coarse bubbly ráles in his chest. He rapidly became unconscious. His blood pressure rose to 200/110 mm. Hg. Subsequent laboratory tests revealed a marked depression of red blood cell cholinesterase activity. It was also noted that the hospital room in which he was confined developed a heavy, unpleasant, sulfur-like odor that resembled that of the common garden insecticide, malathion.

It was learned subsequently that this farm worker had been heavily exposed to the phosphate ester insecticide, thimet, for two weeks prior to development of the above symptoms. The victim had been engaged in replanting cotton in which cotton seed impregnated with thimet was used. Apparently, the worker exercised no precautions with regard to handling the material. The patient's wife stated that the man would come home after a day's work in the field with his trouser legs and other parts of his clothing saturated with the malodorous insecticide. The patient would usually use the same soiled clothing for the next day. The powder from the seeds would also come in contact with exposed parts of his body and legs.

Initial treatment consisted of the intramuscular administration of atropine sulfate. However, his condition became progressively worse and respiration ceased. Artificial respiration by means of a Bennett valve and cyclic manual respiration was employed. Intensive administration of atropine sulfate was carried out. Two milligrams of atropine sulfate was administered intravenously every 15 minutes. In addition to atropinization, the patient was digitalized with intravenous lanatoside C (Cedilanid) and the corticosteroid, hydrocortisone (Solu-Cortef), was also administered intravenously. Within two hours, the patient regained spontaneous respiratory movements, the pupils had dilated slightly and the profuse diaphoresis had diminished. After six hours of continued atropinization (a total of 48 mgs. of atropine sulfate intravenously), the patient regained consciousness, the pupils were dilated and there was noticeably less pulmonary congestion. Subsequent treatment consisted of intravenous atropine sulfate, 2 mg. every four hours for an additional 12 hours, and frequent bathing of the skin with copious amounts of soap and water until the odor of the insecticide from the body surface was no longer apparent. After 12 hours, the acute effects of the intoxication were minimal, and the patient was apparently well on the road to recovery.

The organic phosphate ester insecticides, such as thimet, are extremely potent, useful insecticides that have resulted from research on war gases—in particular, those known as "nerve gases." In addition to the compound thimet, other insecticides of this class include: Parathion, methyl parathion, diazinon,, demeton (systox), TEPP, dipterex, and malathion. These compounds inhibit cholinesterase enzymes throughout the body, resulting in local accumulation of acetylcholine, which produces increased activity of smooth muscle and secretory glands (manifested by nausea, vomiting, diarrhea, miosis, sweating, and increased salivary and bronchial secretion), bradycardia, central nervous system symptoms, and muscular fasciculations and weakness.(2) The organic phosphate esters are absorbed through the skin, respiratory tract, conjunctivae, and the gastrointestinal tract. It has been shown that in agricultural use, absorption through the intact skin is the most frequent route of exposure.(3) By far the greatest number of cases of poisoning from these insecticides occur among unsupervised individuals engaged in some phase of insecticide application.

The medical aspects of poisoning by the insecticidal phosphate esters consist of prevention, detection, and treatment. Prevention of poisoning can be accomplished by education of those

occupationally exposed to the compounds regarding the dangers of skin contamination, inhalation, and ingestion. The use of protective clothing and immediate washing of contaminated skin should be advised. Clothing should be changed and thoroughly washed after each exposure.

Detection of phosphate ester poisoning can be accomplished through recognition of the characteristic symptoms of acetylcholine poisoning. Exposure to amounts of phosphate esters which are too low to produce symptoms can be detected by periodic blood cholinesterase measurements, because marked depression of cholinesterase activity of the blood occurs before symptoms are evident. It is thus possible to terminate the exposure or to institute the proper protective measures before poisoning occurs.(3)

It was clearly demonstrated in the above case history that prompt and sustained atropinization is the essence of successful treatment of anticholinesterase intoxication. Atropine, preferably administered intravenously and in quantities much greater than are normally employed, is essential. There appears to be in the minds of some physicians an exaggerated fear of the toxicity of atropine.(3) It has been shown that one of the characteristics of phosphate ester poisoning is an increased tolerance to atropine.(4) Grob and Harvey(4) state, "Overatropinization may be incapacitating but presents little danger to life." Overatropinization is recognized by the development of very dry mouth, thirst, hoarseness, dry, flushed skin, dilated pupils, blurring of near vision, tachycardia (up to 140 per minute), urinary retention, restlessness, disorientation, maniacal behavior, and increased drowsiness.(4)

Although atropine has been of great benefit in saving the victims of acute poisoning by phosphate esters, its effectiveness is limited to an ability to counteract about two or three lethal doses.(5) Thus, attempts to prevent poisoning should be continued through education of those who are occupationally exposed concerning the dangers associated with careless handling and misuse of these chemical agents.

REFERENCES

1. Grateful acknowledgment is made to George W. King, M.D., of Tucson, Ariz., for information presented in this report.
2. Grob, D. and Johns, R. J., "Treatment of Anticholinesterase Intoxication with Oximes," JAMA, 166:1855, 1958.
3. Hamlin, D. O. and Golz, H. H., "Parathion Poisoning – A Brief Review," Ind. Med. and Surg., 24:65, 1955.
4. Grob, D. and Harvey, A. M., "The Effects and Treatment of Nerve Gas Poisoning," Am. J. Med., 14:52, 1953.
5. DuBois, K. P., "Organic-Phosphate Insecticides," Modern Medicine, 25:18 (Dec. 10, 1957).

STATISTICS OF 86 POISONING CASES IN ARIZONA DURING JULY 1959

AGE:

	Per cent	*Number*
Under 5 years	58.1	(50)
6 to 15 years	7.0	(6)
16 to 30 years	11.6	(10)
31 to 45 years	10.5	(9)
Over 45 years	9.3	(8)
Not reported	3.5	(3)

NATURE OF INCIDENT:

Accidental	72.6	(71)
Intentional	27.4	(15)

TIME OF DAY:

Between 6 a.m. and noon	27.9	(24)
Between noon and 6 p.m.	25.6	(22)
Between 6 p.m. and midnight	20.9	(18)
Between midnight and 6 a.m.	9.3	(8)
Not reported	16.3	(14)

OUTCOME:

Recovery	98.8	(85)
Fatal	1.2	(1)

CAUSATIVE AGENTS:

Internal Medicines	*Number*	*Per cent*
Aspirin	23	26.7
Other analgesics	2	2.3
Barbiturates	7	8.1
Antihistamines	3	3.5
Laxatives	1	1.2
Cough medicine	0	0.0
Tranquilizers	1	1.2
Others	7	8.1
Subtotal	44	51.2
External Medicines		
Liniment	0	0.0
Antiseptics	1	1.2
Others	0	0.0
Subtotal	1	1.2
Household Preparations		
Soaps, detergents, etc.	1	1.2
Disinfectants	3	3.5
Bleach	1	1.2
Lye, corrosives, drain cleaners	3	3.5
Furniture and floor polish	0	0.0
Subtotal	8	9.4

	Number	Per cent
Petroleum Distillates		
Kerosene	1	1.2
Gasoline	1	1.2
Others	2	2.3
Subtotal	4	4.7
Cosmetics		
Pesticides		
Insecticides	4	4.6
Rodenticides	0	0.0
Others	2	2.3
Subtotal	6	6.9
Paints, Varnishes, Solvents, etc.	4	4.6
Plants	4	4.6
Miscellaneous (11 cases of food poisoning)	14	16.3
Unspecified	1	1.2
Total	86	100.0

WILLIS R. BREWER, Ph.D.,
Dean, College of Pharmacy,
The University of Arizona
ALBERT L. PICCHIONI, Ph.D.,
Pharmacologist and Director,
Arizona Poisoning Control Program
LINCOLN CHIN,
Pharmacologist

OSTEOPATHY

Resolution No. 10

INTRODUCED by Doctor Wendell C. Stover of Indiana in the House of Delegates of the American Medical Association in meeting (clinical session) held in Minneapolis, Minn., Dec. 2-4, 1958:

> Whereas, Problems in the relationship between medicine and osteopathy exist in most states; and
> Whereas, These problems differ in the various states and require solution at the state level; therefore be it
> Resolved, That the House of Delegates of the American Medical Association recognizes that the constituent state and territorial associations have the right to establish the relationship of the medical profession to the osteopathic profession within their respective states.

Report of the reference committee on medical education and hospitals to the house of delegates: Recommends that Resolution No. 10 be disapproved, but that the judicial council be requested to review the past pronouncements of the house of delegates with respect to osteopathy and the status of the laws of the various states in this regard. It was requested that the judicial council, if possible, present its report and recommendations at the next meeting of the house of delegates. *Adopted.*

• • • • • • • •

Special report of the judicial council to the members of the House of Delegates of the American Medical Association in annual meeting held in Atlantic City, N. J., June 8-12, 1959:

"In compliance with Resolution No. 10 adopted by the house of delegates at its session in Minneapolis in December 1958, the judicial council reviewed the past pronouncements of the house of delegates and the laws of the several states in regard to osteopathy. Inquiry was directed to the executive officer of the constituent associations, the secretary of the state boards of medical examiners and the secretary of state boards of health. Each was asked to advise regarding the knowledge he had concerning osteopathic practice in his own community. Informal interviews were conducted at random to obtain first-hand expressions of opinion concerning the 'osteopathic question.'

"The council would be remiss if it did not express its appreciation to all who co-operated in its study of this question.

"In brief, the judicial council believes the following is an adequate summary of its findings:

"1. The Principles of Medical Ethics since 1847 have, in substance, expressed the concept that it is unethical for doctors of medicine, members of this association, voluntarily to associate professionally with one who in his practice follows a system of healing 'based on the authority of its promulgator to the exclusion of demonstration and scientific experience.'

"2. Osteopathy was founded as a system of healing in 1894. It was based on the tenents of Andrew T. Still, in opposition to the standard of medical practice as it existed between 1874 and 1894. The tenets, which Still promulgated, on his own authority, and substituted for the existing state of medical science, have not been proved by scientific demonstration and experience.

"3. There appears to have been periods of transition in the history of osteopathy. They may be said to be 1894-1936, and 1936 to the present. In the latter period the curricula and training of the osteopathic colleges were modeled after those of the medical schools. Organized osteopathy began to emphasize that its profession should be termed 'osteopathic medicine' instead of 'osteopathy.' More recently it began to identify its teaching institutions as medical schools conducted under osteopathic auspices.

"4. During this period of transition, more and more osteopaths have obtained the legal right to practice the healing art without limitation. Presently there are in excess of 12,200 licensed osteopaths of whom 9,274 are licensed to practice or do practice a system of healing without limitation.

"Osteopaths are *not* licensed to practice an unrestricted system of healing in the following states: Alabama, Arkansas, Georgia, Idaho, Louisiana, Maryland, Minnesota, Mississippi, Montana, North Carolina, North Dakota, South Carolina.

"In Alaska no legal provision is made for licensing osteopaths.

"In the remaining states, osteopaths may either obtain a license to practice the healing art without limitation, or they do practice without limitation by virtue of the license they are granted. Statutes defining osteopathy or limiting its scope are ambiguous in several of these states, as for example in Iowa, Maine, Nevada, Oregon, Rhode Island and Tennessee. In Nebraska osteopaths could and some did take successfully the medical board between 1943 and 1948 but since then have been licensed only to practice a limited system of healing.

"Under federal laws and regulations, osteopaths have almost identical status with doctors of medicine.

"5. There are six colleges of osteopathy. No evidence has been brought to the council's attention which would indicate that teaching in these schools is of a quality or quantity less than described in the report of the committee for the study of relations between osteopathy and medicine. (Atlantic City meeting, June 1955, house of delegates.)

"6. The constitution of the American Osteopathic Association was amended in July 1958, at the annual meeting of that association. Prior to that time that document in its statement of 'objects' provided:

> 'The objects of this association shall be to promote the public health and the art and science of the osteopathic school of practice of the healing art;
>
> 'By maintaining high standards of osteopathic education and by advancing the profession's knowledge of surgery, obstetrics, and the prevention, diagnosis and treatment of disease in general;
>
> 'By stimulating original research and investigation; and by collecting and disseminating the results of such work for the education and improvement of the profession and the ultimate benefit of humanity;
>
> 'That the evolution of the osteopathic principles shall be an ever-growing tribute to Andrew Taylor Still, whose original researches made possible osteopathy as a science.'

"At its July 1958, meeting the American Osteopathic Association amended its constitution by deleting the above statement. Now the 'object' article of the constitution reads, in full, as follows:

> 'The objects of this association shall be to promote the public health, to incorporate scientific research and to maintain and improve high standards of medical education in osteopathic colleges.'

Recommendations

"There can be no doubt that osteopathy, as originally conceived, did constitute a practice of the healing art based on the authority of its promulgator to the exclusion of demonstrated scientific experience. Prior to the recent period mentioned above, all osteopaths, who adhered to the tenets of the founder of osteopathy, unquestionably practiced medical cultism. Even today those who adhere to such medical dogmas

must be classified as cultists and voluntary professional association with osteopathic practitioners of this type is unethical. There can be no deviation from the basic principle that it is unethical for members of the American Medical Association, to voluntarily associate professionally with those who in their professional activities practice a method of healing which is not based on approved scientific principles.

"The question, however, which is now posed does not concern the validity of this principle, but rather its application. Up to the present time this principle has been applied to all osteopaths. Should this application of the principle be continued? Should all osteopaths be regarded as cultists, or is it possible that some should not be so classified?

"Based on information obtained from the authentic sources which have been mentioned, the judicial council believes that many practitioners of osteopathic medicine now conduct their professional activities according to scientific principles. In a majority of the states, osteopaths may legally practice the healing art to the same extent as doctors of medicine. Therefore, the judicial council believes there is a reasonable doubt that the original interpretation of Section 3 of the Principles of Medical Ethics should be applied to the relationships between doctors of medicine and *all* practitioners of osteopathic medicine.

"It would seem that the American medical profession may now have an obligation in the interest of the welfare of patients to acknowledge the propriety of voluntary professional association between doctors of medicine and practitioners of osteopathic medicine who (a) may lawfully practice without limitation and, (b) subscribe to those scientific principles which guide members of the American Medical Association.

"The Council therefore recommends that:

"(1) The principle be reaffirmed that all voluntary professional association between doctors of medicine and those who do not practice a system of healing based on scientific principles is unethical.

"(2) It shall not be considered contrary to the Principles of Medical Ethics for members of the American Medical Association voluntarily to associate professionally with physicians, other than doctors of medicine, who are licensed to practice the healing art without limitation and who base their practice on the same scientific principles as those adhered to by members of the American Medical Association, and that

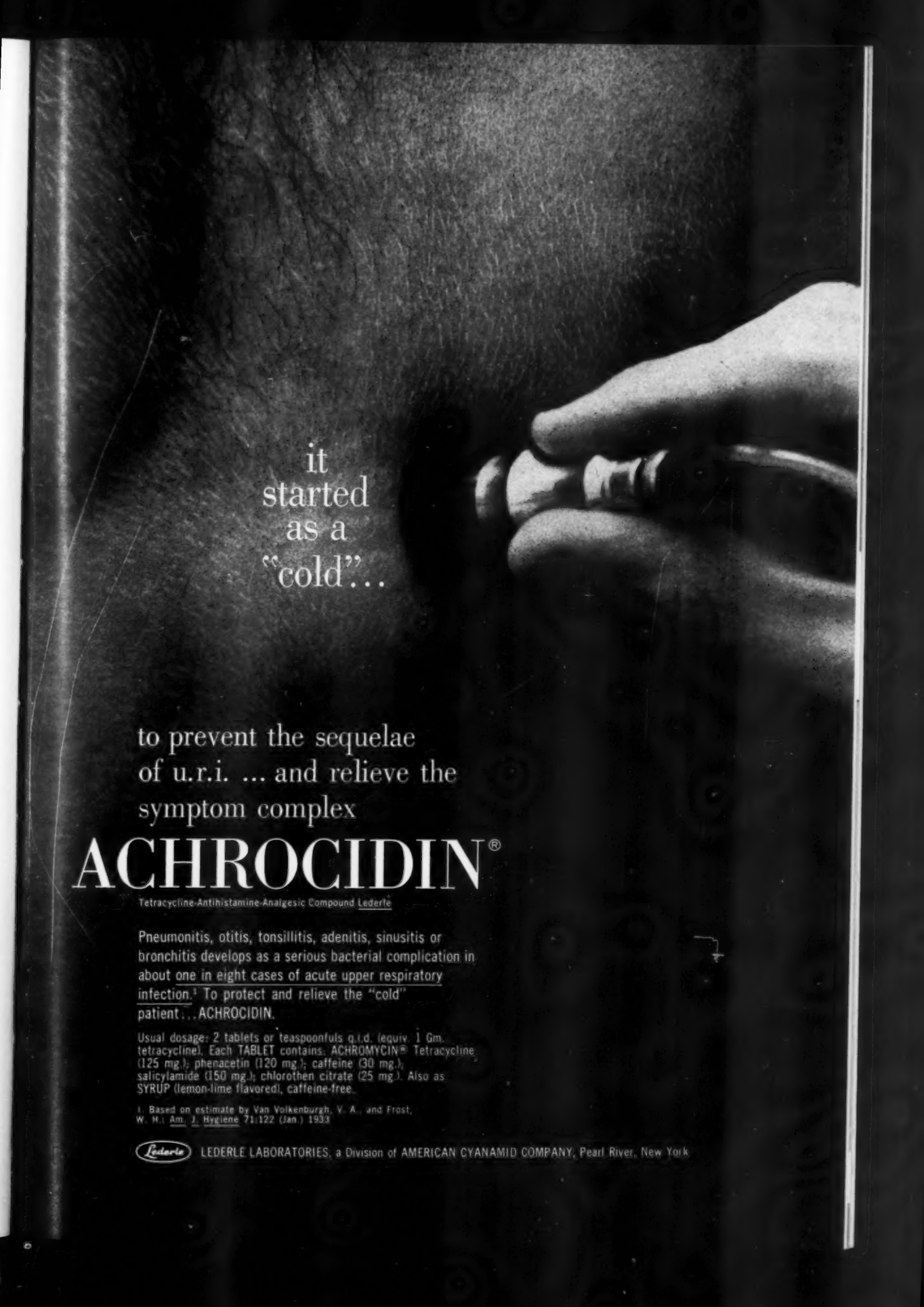
"(3) It shall not be considered contrary to the Principles of Medical Ethics for members of the American Medical Association to teach students of osteopathic medicine who seek to develop and improve their knowledge of the science of medicine and thereby to improve their ability to provide a better quality of medical care."

Report of the reference committee on amendments to the constitution and by-laws of the house of delegates:

1. Your reference committee is deeply impressed with the work done by the judicial council in preparing its report and recommendations to the house of delegates on this important subject. It is noted that the council reviewed the previous policy statements of the house and the status of the laws of the several states. In addition, the council wrote to the executive officer of each constituent medical association, the secretary of each state board of medical examiners, and conducted numerous interviews. The information received from these sources, in the opinion of your committee, constitutes authentic data.

2. Your committee was also impressed by the reasonable and serious discussion of the osteopathic question by those who attended the hearing. It is the belief of your reference committee that the discussion can be divided into three categories: (1) approval of the judicial council's recommendations as printed in the handbook (recited above); (2) disapproval of those recommendations; and (3) suggested modification of the council's recommendations.

Two topics appeared most often during the discussion; (a) the general quality of medical care received by the population at large and, (b) the effect which a change in basic American Medical Association policy might have in those states where osteopaths are not now accorded unlimited practice privileges. In this connection, your reference committee points out that in 12 states, osteopaths may not practice without restriction, that in Alaska no provision is made for the licensure of osteopaths, and that in the remaining 36 states, osteopaths either lawfully practice without limitation by virtue of the license they hold, or practice without limitation because of local interpretation or enforcement policies.



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1. Based on estimate by Van Volkenburgh, V. A., and Frost, W. H.: Am. J. Hygiene 71:122 (Jan.) 1933

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3. Your reference committee believes that it expresses the sentiments of those who appeared before it by saying that the medical profession is justified in objecting to various cults, not because of their system of practice, but because of the serious lack of education of their members and the fact that they are seeking the right to practice as doctors of medicine without meeting the same educational standards.

If such practitioners wish to act as physicians and surgeons and to assume all the resultant responsibilities, then they should not object to being measured by the same standards and submitting to the same tests as do doctors of medicine.

Your reference committee believes that in each state there should be established one educational standard in the field of medicine and surgery, administered by a single licensing board by which everyone who is authorized to practice medicine and surgery should be required to prove he has secured satisfactory training in the fundamentals of medical science. Osteopathic colleges, and indeed all colleges teaching medicine and surgery or any of its branches, should be inspected and classified according to the same standards of measurements now being applied in medical schools and by the same boards which aprove medical schools. We believe that no one should be granted the privilege of practicing medicine in any state until he proves to the satisfaction of the licensing board, that he has graduated from a professional school approved by that board, and until he has passed the same examination that doctors of medicine must pass.

4. Your reference committee believes the American Osteopathic Association should be commended for amending its constitution so as to emphasize scientific objectives and high standards of medical education. Your reference committee further believes that it can be accepted as the opinion of those who appeared before it that the organized osteopathic profession can further demonstrate its good faith and can implement the change in its constitution by joining with doctors of medicine to improve the structure of medical practice acts as suggested above.

5. Your reference committee believes that, instead of accepting the recommendations of the judical council as printed in the handbook, the following should be established as the policy of this association in regard to the relations between doctors of medicine and osteopaths (as amended):

(a) All voluntary professional associations between doctors of medicine and those who practice a system of healing not based on scientific principles are unethical.

(b) Enactment of medical practice acts, requiring all who practice as physicians and surgeons to meet the same qualifications, take the same examinations and graduate from schools approved by the same agency should be encouraged by the constituent associations.

(c) It shall not be considered contrary to the principles of medical ethics for doctors of medicine to teach students in an osteopathic college which is in process of being converted into an approved medical school under the supervision of the Council on Medical Education and Hospitals of the American Medical Association.

(d) That a liaison committee be appointed by the board of trustees of the American Medical Association to meet with representatives of the American Osteopathic Association, if mutually agreeable, to consider problems of common concern including inter-professional relationships on a national level. *Adopted.*

JESSE D. HAMER, M.D.,
Arizona Delegate to AMA

HELP FOR FAMILY OF CANCER PATIENT

A NEW pamphlet designed to assist the families of cancer patients meet the difficult physical and psychological problems connected with that disease has been issued by the public affairs committee in co-operation with the American Cancer Society.

Written by Elizabeth Ogg with the assistance of several medical groups specializing in cancer research and treatment, the pamphlet suggests ways of "handling the situation created by your relative's cancer with a minimum of mental suffering." It also contains specific advice on preparing for surgery and rehabilitation after surgery. The latest of the non-profit Public Affairs Pamphlet series, it is available for 25 cents from the committee's office at 22 East 38th St., New York, N. Y.

THE ARIZONA MEDICAL ASSOCIATION, INC., RESOLUTIONS 1959 MEETING

JOINT ACCREDITATION OF HOSPITALS

THE House of Delegates of The Arizona Medical Association, Inc., in annual meeting, May 2, 1959, adopted the following resolution introduced by Doctor Preston T. Brown of Phoenix:

"*WHEREAS*, the program of joint accreditation of hospitals by the joint commission, in which the American Medical Association participates, has made excellent progress, and

"*WHEREAS*, the principles of the program have been well established, but

"*WHEREAS*, the centralization of authority without appeal has led to the establishment of bureaucratic dogmatism, resulting in unrealistic rules and regulations having little relationship to varying local conditions, and

"*WHEREAS*, the channels of communication regarding professional standards have broken down, in that rules and regulations pertaining to professional matters are transmitted through and interpreted by lay persons to the confusion and inconvenience of the medical profession, now therefore

"*BE IT RESOLVED* by the House of Delegates of The Arizona Medical Association, Inc., that the program of joint accreditation of hospitals should be amended by:

1. Providing that the rules and regulations of the joint commission, insofar as they pertain to professional standards, including medical records, shall be effective only when approved by the governing body of the state medical associations or by a body constituted by the governing body for this purpose on a state level.

2. Providing that accreditation will be awarded or withdrawn only with approval of governing body of the state medical associations or such other body as may be designated as above described.

3. Providing that inspectors shall report to representatives of the governing body of the state medical association upon beginning and completing an inspection of an area under the jurisdiction of such medical association.

4. Providing that reports of inspections and recommendations be transmitted to the governing body of the state medical association or the body designated by it to act for it, and that distribution be the responsibility of the governing body of the state medical association, all communications being directed to the medical doctor designated as chief or president of each hospital staff, as well as to the lay hospital administrator.

5. Providing further that no recommendations or reports shall be effective unless favorably endorsed by the governing body of the state medical association.

BE IT FURTHER RESOLVED that the delegate of the Arizona Medical Association to the American Medical Association be instructed to present this resolution and seek its implementation, and

BE IT FURTHER RESOLVED that the cooperation of the American College of Surgeons, the Academy of General Practice and other interested organizations within the medical profession be sought to effect this reform."

As directed, this resolution was introduced in the house of delegates of the American Medical Association in meeting held in Atlantic City, N. J. June 8-12, 1959, and numbered 7.

The reference committee on medical education and hospitals of the AMA reported that it agrees with the statement contained in Resolution No. 7 that the program of accreditation of the Joint Commission on Accreditation of Hospitals has made excellent progress but calls attention to the "Report of the Committee to Review the Functions of the Joint Commission on Accreditation of Hospitals" (Wendell C. Stover, chairman – see JAMA, Sept. 29, 1956, Pp. 490-500) which was adopted by the house of delegates in June 1956. The reference committee urged further implementation of the recommendations contained in that report and that the representatives of the American Medical Association who serve as commissioners of the joint commission be urged to expedite the implementation of this report. The reference committee believes that the house of delegates, in adopting the committee report referred to above, has already acted with reference to the problem set forth in Resolution No. 7. It therefore recommends that Resolution No. 7 not be approved.

The house determined that no action be taken (on Resolution No. 7 at this time).

JESSE D. HAMER, M.D.,
Arizona Delegate to AMA

SOCIALIZED MEDICINE

THE House of Delegates of The Arizona Medical Association, Inc., in annual meeting, May 2, 1959, adopted the following resolution introduced by Doctor W. Shaw McDaniel of Phoenix:

"*WHEREAS*, there are in this country many groups dedicated to furthering many types of socialistic principles and sponsored by the government of the United States, and

"*WHEREAS*, among the principal objectives of the socialistic planners has been and continues to be in this and all other countries the ultimate complete socialization of the medical profession as one of the two major steps in furtherance of the extension of the welfare state, and

"*WHEREAS*, in every nation where socialized medicine has been established for the people, the cost of the program has tended to bankrupt the economy while at the same time the quality of medical care, as a whole, has deteriorated, and

"WHEREAS, there are in existence several government programs for care of various groups such as dependents of military personnel, and certain aspects of the veterans' program, and these programs are becoming increasingly and unbearably costly and are covering a greater segment of the population than was originally intended by congress, and

"*WHEREAS*, there is no demonstrable need for changing the character of medical service in this country, especially in view of the rapid expansion of private insurance coverage for the health needs of the people, and

"*WHEREAS*, the principle of free enterprise in this country since its founding has produced the most powerful and advanced nation in the history of the world, and

"*WHEREAS*, the private practice, as one of the cornerstones of free enterprise, has produced the highest standards of medical practice, the greatest increase in longevity, and the greatest improvement in the general health of the people.

"*THEREFORE BE IT RESOLVED*, that The Arizona Medical Association, Inc., shall adopt the principle of non-participation in any scheme of socialization of the medical profession under whatever name or guise, and shall not enter into any new contracts with the federal government or any agency thereof; which would further the advent of such government intervention between the doctor and the patient.

"*AND LET IT BE FURTHER RESOLVED*, that the above principle of non-participation will not in any way endanger or change the traditional obligation of the doctors of the association to care for anyone in need of medical attention under the time-tested and proved methods for distribution of medical services known as the private practice of medicine.

"*AND LET IT BE FURTHER RESOLVED*, that this resolution shall be forwarded to the executive vice president of the American Medical Association for introduction into the American Medical Association house of delegates at their annual meeting in June 1959."

As directed, this resolution was introduced in the house of delegates of the American Medical Association in meeting held in Atlantic City, N. J., June 8-12, 1959, and numbered 6.

The reference committee on insurance and medical services of the AMA, after careful consideration of Resolution No. 6 on socialized medicine — Its Avoidance Through Non-Participation in Government Medical Contracts, offered the following substitute:

"*WHEREAS*, The American Medical Association has been in the past and continues to be completely opposed to all forms of socialism and socialized medicine; therefore be it

"*RESOLVED*, That every government program which has implications of or might lead to socialized medicine should be scrutinized with great care before the profession enters into any such program." *Adopted.*

JESSE D. HAMER, M.D.,
Arizona Delegate to AMA

SCIENTIFIC ASSEMBLY COMMITTEE
69th Annual Meeting — 1960:

DOCTOR BEATON called the meeting to order reporting that the house of delegates of the association in meeting held May 2, 1959, expressed the wish that the 69th annual meeting of the association be held in the Phoenix area with due consideration of adequate refrigeration.

The board of directors in meeting held June

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- presents no problem of rebound congestion
- avoids "nose drop addiction"

Relief with Triaminic is prompt and prolonged because of this special timed-release action . . . beneficial effect starts in minutes, lasts for hours

first — the outer layer dissolves within minutes to produce 3 to 4 hours of relief

then — the core disintegrates to give 3 to 4 *more* hours of relief

Each TRIAMINIC Tablet provides:
Phenylpropanolamine HCl .....50 mg.
Pheniramine maleate .....25 mg.
Pyrilamine maleate .....25 mg.

One-half of this formula is in the outer layer, the other half is in the core.

Dosage: One tablet in the morning, mid-afternoon and at bedtime.

References: 1. Lhotka, F. M.: Illinois M. J. 112: 259 (Dec.) 1957. 2. Fabricant, N. D.: E.E.N.T. Monthly 37:460 (July) 1958. 3. Farmer, D. F.: Clin. Med. 5:1183 (Sept.) 1958.

TRIAMINIC JUVELETS: Each timed-release Juvelet is equivalent in formula and dosage to one-half of a TRIAMINIC tablet, for the adult or child who requires only half strength dosage.

TRIAMINIC SYRUP is recommended for adults and children who prefer liquid medication. Each 5 ml. tsp. is equivalent to ¼ of a Triaminic Tablet. *Adults:* 2 tsp. 3-4 times a day; *children 6-12:* 1 tsp. 3-4 times a day; *children under 6:* in proportion.

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21, 1959, determined that the dates of the annual meeting be Wednesday through Saturday, May 4 through 7, 1960.

Reviewing a number of available sites in the Phoenix area, the board of directors further expressed the desire to hold the meeting in Scottsdale with headquarters at the Safari Hotel. Following due deliberation and evaluation of all factors, the committee approved of the location and facilities to be made available.

Specific events were then determined upon as follows:

May 4, 1960
(Wednesday morning) Board of directors – annual meeting
(Wednesday afternoon) House of delegates – first session
(Wednesday evening) Reception and buffet supper

May 5, 1960
(Thursday morning) Scientific sessions
(Thursday afternoon) Blue Shield corporate meeting
(Thursday evening) Specialty group dinner meetings

May 6, 1960
(Friday morning) Scientific sessions
(Friday afternoon) House of delegates – second session
(Friday evening) Reception and President's Dinner-Dance

May 7, 1960
(Saturday morning) Scientific sessions
Saturday afternoon) Golf tournament

Scientific Sessions:

It was tentatively determined that the scientific sessions would be held Thursday, Friday and Saturday mornings; that on Thursday and Friday mornings, from 8 to 9:30 o'clock, possibly the sessions to be preceded by a breakfast and seminar on "Whiplash" and "Hypnosis," respectively; and on Saturday morning the session could commence at about 9 a.m. All scientific sessions would terminate at about 12 noon or 12:30 p.m.

Golf Tournament:

Doctors C. Thomas Read, chairman, and Warren A. Colton Jr., both of Phoenix, and Edgar R. Updegraff of Tucson were appointed to serve as the golf tournament committee. It is to be suggested to Doctor Read that it might be desirable to arrange for a dinner Saturday evening, May 7, 1960, following the tournament in the afternoon, to be financed either by themselves or sponsored by a pharmaceutical company. The usual $100 will be contributed by the association for golf prizes to be augmented by any other gifts obtained by the committee.

Fees:

The board of directors on June 21, 1959, determined that the registration fee shall continue at $10 and the exhibitor fee at $150. It is understood that all registrants will be required to pay the established fee, including VA doctors, but excepting interns, residents and those in military service. Effort shall be made to contact the various hospitals in the state and invite those exempted to be present and participate in the scientific sessions.

Exhibits:

It was finally concluded that we will require utilization of a tent to house the exhibits, both scientific and technical, and that every effort be made to produce a show with a "Western" flavor and consider ways and means, including possibly registration prizes, to revitalize and improve attendance.

Scientific Sessions:

Doctor Beaton reviewed in detail the results of a survey undertaken and completed in an effort to ascertain the wishes of the membership to the end that the annual meetings will become more attractive and increase the registration. Some of the results revealed: (a) a majority is in favor of the resort type hotel, rather than the usual commercial hotel, as a site for the meeting; (b) about one-third desired longer scientific sessions, one-third shorter and one-third expressed no change desirable; (c) shorter papers were expressed most desirable; (d) a heavy predominance favored (1) more panel-type discussions, (2) more presentations of particular interest in everyday clinical practice, and (3) more stress placed on scientific sessions; (e) no particular stress on social or cultural activities; and (f) a heavy vote against athletic and sporting activities.

The Thursday, Friday and Saturday morning scientific sessions were thoroughly reviewed and discussed. As some of the detail has yet to be developed and to give the chairman adequate leeway for arrangement, only the general tentative outline is listed below:

Thursday morning – May 5, 1960

8 a.m.-9:30 a.m. – Panel seminar on Whiplash (Breakfast)

10 a.m. – Scientific papers

10:30 a.m. – General session

11 a.m.-12 noon – Scientific papers

Note: Thursday noon specialty group luncheon – meetings may include: (a) Arizona Chapter – American College of Chest Physicians, and (b) Arizona Pediatric Association.

Thursday evening specialty group dinner – meetings may include: (a) Western Orthopaedic Association, and (b) Arizona Society of Pathologists.

Friday morning – May 6, 1960

8 a.m.-9:30 a.m. – Panel seminar on Hypnosis (Breakfast)

9:30 a.m.-12 noon – Scientific papers

Note: Friday noon specialty group luncheon – meetings may include: (a) Greater Arizona Chapter – Allergy Foundation of America, and (b) Arizona Chapter – American College of Surgeons.

Saturday morning – May 7, 196

9 a.m.-12 noon – Scientific papers – Mystery Case

Again, the time schedules and arrangements are subject to change; also, additional specialty groups, including the Arizona Academy of General Practice may be added for either a luncheon-meeting or dinner-meeting. It was determined that the specialty groups on request for luncheon or dinner meetings will be assigned a time and place for such meetings as available.

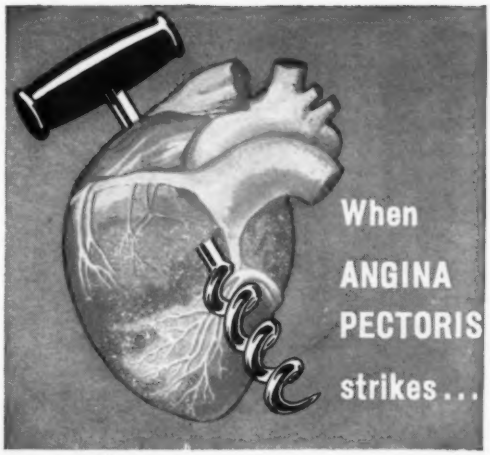
It was also suggested that possibly the governor of the State of Arizona may be invited to participate in the general session, Thursday morning, May 5.

Renewal of the previous programing to include specialty group participation in the scientific sessions arrangements was determined, granting those interested to select a speaker(s) and share expenses.

Publicity:

Doctor Roland F. Schoen (Casa Grande) was appointed publicity chairman and will outline a program to effectively accomplish the desired results making the 69th annual meeting of this association outstanding.

LOREL A. STAPLEY, M.D.,
Secretary



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Supplied: Bottles of 100 and 1000 tablets.

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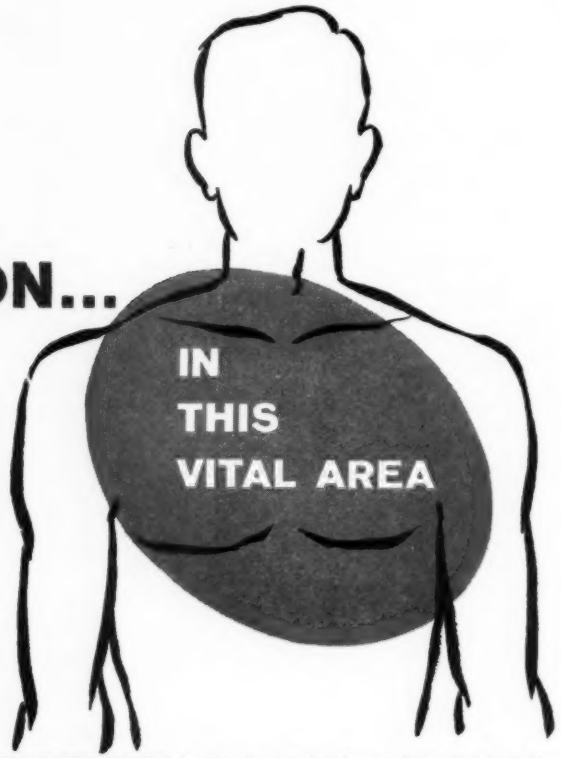

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BOARD OF MEDICAL EXAMINERS STATE OF ARIZONA

THE Board of Medical Examiners of the State of Arizona at a regular meeting held Saturday, July 18, 1959, issued certificates to practice medicine and surgery in this state to the following doctors of medicine:

AHERNS, WALTER E. (Pd) ..... 130 S. Scott, Tucson, Ariz.
ALCORN, ESTHER E. (GP) ..... 6031 E. Sylvane, Tucson, Ariz.
ANDREWS, THURL E. (I-Ca) ..... 926 E. McDowell Rd., Phoenix, Ariz.
BARBER, ROBERT D. (Path) ..... 1011 N. Craycroft, Tucson, Ariz.
BEJARANO, CHARLES A. (GP) ..... 718B Sullivan St., Miami, Ariz.
BELT, JOHN A. (GP) ..... 713 N. Beaver, Flagstaff, Ariz.
BERTINO, JR., GEORGE G. (GS-GP) ..... 212A Bruchman Bldg., Winslow, Ariz.
BEUKER, HERMAN (GP) ..... 120 E. Michigan, Marshall, Mich.
BLINSTRUB, ALFONS A. (GP) ..... 1626 N. 7th St., Phoenix, Ariz.
BREEN, HAL J. (P) ..... 5051 N. 34th St., Phoenix, Ariz.
BRUNSTING, JR., LOUIS A. (ObG) ..... 116 N. Tucson Blvd., Tucson, Ariz.
BRYAN, HARRY D. (GP) ..... U. S. Public Health Serv., Phoenix, Ariz.
CLEMENS, ALBERT L. (GS) ..... 526 Des Moines Bldg., Des Moines, Iowa
CURTIS, BRUCE N. (GP) ..... Safford, Ariz.
CUTTS, ROBERT I. (P) ..... VA Hospital, Tucson, Ariz.
DAHLEN, RICHARD F. (D) ..... 1520 N. Norton, Tucson, Ariz.
DEAN, DAVID L. (GS) ..... 461 W. Catalina Dr., Phoenix, Ariz.
EPSTEIN, LLOYD S. (GS) ..... 1535 N. Tucson Blvd., Tucson, Ariz.
EWING, RUTH E. (Gyn) ..... 402 S. Downing Lane, Tucson, Ariz.
FREEL, JOHN A. (GP) ..... 114 N. Madison, Bay City, Mich.
FRENCH, JAMES B. (S) ..... 1100 Arizona St., Boulder City, Nev.
GREER, WILLIAM E. (ALR) ..... RR 1 Bird Lake, Vandalia, Mich.
HENRIE, JOHN N. (Or) ..... 2620 N. 3rd St., Phoenix, Ariz.
HUNT, MAURICE E. (GP) ..... 2534 Francis St., Jackson, Mich.
HURLEY, JAMES M. E. (GP) ..... 1130 E. McDowell, Phoenix, Ariz.
JOHNSON, CHRISTINE A. (D) ..... 1660 N. Berkeley Ave., Pomona, Calif.
JOHNSON, ROBERT W. (I) ..... 1660 N. Berkeley Ave., Pomona, Calif.
KAMPFER, MERLIN W. (I) ..... 461 W. Catalina Dr., Phoenix, Ariz.
KELLEY, W. RANSOM (R) ..... 1130 E. McDowell Rd., Phoenix, Ariz.
LACY, JR., WATSON M. (GP) ..... Box 44, Page, Ariz.
McSWAIN, HANSEL T. (TS) ..... Greenway Station, Tucson, Ariz.
MATHEUS, CHARLES G. (Oph) ..... 301 N. Central Med. Bldg., Phoenix, Ariz.
MAY, DERALD G. (P) ..... 5051 N. 34th St., Phoenix, Ariz.
MIGRAY, EUGENE (GP-S) ..... 846 W. Thomas Rd., Phoenix, Ariz.
MOSSER, ROBERT S. (I) ..... 10901 Winner Rd., Independence, Mo.
NAUMAN, JAMES D. (R) ..... 1603 N. Tucson Blvd., Tucson, Ariz.
ROBERTSON, ALEXANDER D. (GP-P) ..... 6050 Camelback Rd., Scottsdale, Ariz.
SAAR, RICHARD E. (Or) ..... 1313 N. 2nd St., Phoenix, Ariz.
SAULTS, CHARLES J. (GP) ..... Mullen, Neb.
SCHILL, AUSTIN E. (ObG) ..... 405 Sixth Ave., Des Moines, Iowa
SEAGRAVES, JACK W. (GP) ..... 412 Roosevelt St., Phoenix, Ariz.
SMITH, GAYLORD E. (GP) ..... 694 E. Southern, Phoenix, Ariz.
SOMMERVILLE, ROBERT L. (GE) ..... Mayo Clinic, Rochester, Minn.
STEIDL, RICHARD A. (GP) ..... 330 E. Francis Ave., LaHabra, Calif.
SUTHERLAND, LYNDON C. (GP) ..... Arizona State Univ., Tempe, Ariz.

TIMMONS, RICHARD P. (GP)	1602 N. 15th Ave., Phoenix, Ariz.
TRISLER, JOHN D. (ObG)	130 S. Scott St., Tucson, Ariz.
WALDMANN, EDWARD B. (I)	461 W. Catalina Dr., Phoenix, Ariz.
WARD, ADELE C. (GP)	744 N. Stone, Tucson, Ariz.
WASHBURN, J. BALLARD (GP)	Box 997, Page, Ariz.
WILD, JOHN J. (Oph)	607 N. 4th Ave., Tucson, Ariz.
WILMOTH, JR., THOMAS C. (GP)	1509 E. Thomas Rd., Phoenix, Ariz.
WINEINGER, JOHN H. (I)	130 S. Scott St., Tucson, Ariz.
WOOD, JR., JAMES G. (R)	1219 N. Beaver St., Flagstaff, Ariz.
ZELL, JOHN R. (P)	5051 N. 34th St., Phoenix, Ariz.

HILL-BURTON GRANTS TO ARIZONA

WASHINGTON OFFICE,
ARIZONA MEDICAL ASSOCIATION

THE department of health, education, and welfare reports that as of June 30, the status of all Hill-Burton grants for the state of Arizona for projects approved during the past month is: Sacred Heart Home, Phoenix; estimated total cost, $2,463,338; approved federal share, $100,000; no additional beds.

Completed and in operation: 32 projects at a total cost of $19,287,417, including federal contribution of $6,347,503 and supplying 122 additional beds.

Under construction: seven projects at a total cost of $5,999,896, including federal contribution of $1,725,000 and designated to supply 62 additional beds.

Approved, but not yet under construction (including above): four projects at a total cost of $3,748,113, including $680,000 federal contribution and designed to supply 53 additional beds.

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Vitamin D	500 U.S.P. Units
Vitamin B_{12} with AUTRINIC® Intrinsic Factor Concentrate	1/15 U.S.P. Oral Unit
Thiamine Mononitrate (B_1)	5 mg.
Riboflavin (B_2)	5 mg.
Niacinamide	15 mg.
Folic Acid	1 mg.
Pyridoxine HCl (B_6)	0.5 mg.
Ca Pantothenate	5 mg.
Choline Bitartrate	50 mg.
Inositol	50 mg.
Ascorbic Acid (C)	50 mg.
Vitamin E (as tocopheryl acetates)	10 I.U.
l-Lysine Monohydrochloride	25 mg.
Rutin	25 mg.
Ferrous Fumarate	30 mg.
Iron (as Fumarate)	10 mg.
Iodine (as KI)	0.1 mg.
Calcium (as $CaHPO_4$)	157 mg.
Phosphorus (as $CaHPO_4$)	122 mg.
Boron (as $Na_2B_4O_7 \cdot 10H_2O$)	0.1 mg.
Copper (as CuO)	1 mg.
Fluorine (as CaF_2)	0.1 mg.
Manganese (as MnO_2)	1 mg.
Magnesium (as MgO)	1 mg.
Potassium (as K_2SO_4)	5 mg.
Zinc (as ZnO)	0.5 mg.

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